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MONTANA WATER POLLUTION CONTROL PROGRAM PLAN  
FOR  
FISCAL YEAR 1977

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## INTRODUCTION

The state's goals with regard to water pollution are set forth in Section 69-4801, R.C.M. 1947 of the state's water pollution control act, which states in part:

(1) *It is the public policy of this state to:*

- (a) *conserve water by protecting, maintaining, and improving the quality and potability of water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, recreation, and other beneficial uses;*
- (b) *provide a comprehensive program for the prevention, abatement, and control of water pollution.*

The Montana water pollution control program is in response to two laws--Section 69-4801 through 69-4827 of the 1947 Revised Codes of Montana and P.L. 92-500 (Federal Water Pollution Control Act Amendments of 1972). In the past, Montana's program has focused mainly at control of point sources (i.e. discharges from municipalities and industries), whereas in the future years, control of nonpoint sources (e.g. such as surface runoff from land carrying high sediment loads) will become a major focal point. A major effort on nonpoint source pollution control began in 1975 through federal funding of four areawide planning organizations to carry out local water pollution control management planning. Similar planning for the remainder of the state not included in the local planning areas will begin in 1976. The major responsibility for this statewide water pollution control management planning has been delegated to the Water Quality Bureau.

Both the state and federal laws impose a heavy workload on the bureau and the Environmental Protection Agency (EPA) personnel; and for this reason, priorities for programs must be established, recognizing that everything cannot be done at once. The bureau and Region VIII EPA, through coordination of their individual program planning, have attempted to reduce duplication of effort to a minimum.

There is the need to review and revise laws and regulations to reduce paperwork and still accomplish the goals of the Montana act and P.L. 92-500. Montana's program is, to a large part, dictated by P.L. 92-500. The program plan is an outline of the bureau's responsibilities, past program, five year strategy, and proposed program for fiscal year 1977 beginning October 1, 1976 (federal fiscal year).

A partial purpose of the program plan is to meet EPA's requirement for submittal to substantiate the use of federal funds. The major purpose is to provide information to the people of Montana interested in water pollution control on the state's activities in this field. A major portion of the bureau's funding is obtained through EPA grants.

## MONTANA WATER QUALITY PROBLEMS

Estimated miles of Montana's streams degraded in each basin are shown in Table 1. Of the estimated 4,000 miles of streams degraded, only 200 miles are degraded by point source discharges and are, thus, effluent limited. All of these 200 miles will be corrected by construction measures which have already begun. Thus, 3,800 miles of Montana streams are being degraded by nonpoint sources and are water quality limited. Streams not listed in Table 1 are assumed to meet Montana water quality standards. Total mileage of Montana streams is not known.

Montana legislation defines natural as *conditions or material present from runoff or percolation over which man has no control or from developed land where all reasonable land, soil and water conservation practices have been applied. Conditions resulting from dams at the effective date of this act are "natural."* The definition of natural requires that we have a definition of reasonable land, soil and water conservation measures before we can determine if pollution is occurring. This definition also requires that we have sufficient manpower to determine if, in fact, these practices are being employed. A sediment control project has been developed which may help answer these questions and help restore the 2,500 miles of streams degraded by sediment.

Much of the sediment in the Clarks Fork of the Yellowstone and Muddy Creek, a tributary of the Sun River, is known to result from agricultural practices. Even in these two cases, it is not known how much results from unreasonable conservation practices. Many other streams also suffer from excessive sediment, and even less is known of the status of conservation measures in these cases. The same considerations apply to problems arising from temperature increases, dewatering, salt increases, as well as nutrient concentrations.

About 190 miles of Montana's streams are degraded by mining waste. Of these, 80 miles are below Butte and result from a deposition of mining and milling wastes in and adjacent to the stream channel. Input of wastes has substantially stopped, but many years will be required for the streams to completely recover. At present, there are no practical means available to restore streams damaged by mining wastes.

Industrial waste dischargers, for the most part, will need minor improvements to meet best practicable treatment requirements established by the water pollution control act, and no great problem in meeting these requirements is foreseen. Only 30 miles of Montana streams are being degraded by industrial wastes.

Municipal discharges only impact about 200 miles of streams. The majority of these will be corrected when present construction is completed. There are many other municipal dischargers which do not meet the provisions of the act, particularly the provision for chlorination. However, in view of the minimal impact of coliforms and the unknown but potentially large effects on the aquatic ecosystems and human health, the requirement for chlorination of all municipal discharges should be more closely examined.

Supersaturation of dissolved gases has greatly reduced fish populations in the Kootenai River below Libby Dam. The gases are entrapped in the waters of the overflow of the dam. Similar problems exist on the dams from the Lower Clark Fork River. However, by definition, these are natural conditions; therefore, the water quality legislation should be changed to minimize these impacts.

As discharge requirements to surface waters become more strict, the potential for pollution of underground waters and air increases. Ways must be found to insure that we do not transfer our surface water pollution to our underground waters or to our air.

Possibly the greatest potential for groundwater damage in Montana is due to saline seep. There is also a substantial potential for surface water pollution from saline seep. A sampling and analysis program will continue in fiscal year 1977. This program is designed to determine the effects and extent of saline seep in Montana and to establish baseline chemical data.

The state's greatest challenge is to prevent degradation of waters which exceed the water quality standards.

TABLE 1

SUMMARY OF DEGRADED MONTANA STREAMS BY BASIN AND CAUSES (IN MILES)

	SEDIMENT	TEMPERATURE	DEWATERING	SALTS	NUTRIENTS	COLIFORMS	LOW DISSOLVED OXYGEN	ACID MINE WATER AND TOXIC METALS OIL & GREASE, PHENOLS, COLOR	ARSENIC AND FLUORIDE FROM YNP	MISCELLANEOUS	TOTAL MILES DEGRADED IN THE BASIN	TOTAL MILES DEGRADED IN THE BASIN BY POINT-SOURCE
UPPER MISSOURI	450	128*	128*		30	40*		20		126	735	31
MISSOURI-SUN-SMITH	160	20*	60*		12*	50		50			310	50
MARIAS	216*	186*	261*	125*		9			7	6 (NH <sub>3</sub> from sewage)	440	22
MIDDLE MISSOURI	180*			195*	60*	11*					240	0
MILK	290					170 <sup>3</sup>	24				290	20
LOWER MISSOURI				250*		70*					250	0
MUSSELSHELL	300*	300*	300*	300*	300*	4 3*					300	3
UPPER YELLOWSTONE	80					25*		35	25*	60	200	?
MIDDLE YELLOWSTONE	315			255							315	0
LOWER YELLOWSTONE	275*			275*							275	0
LITTLE MISSOURI						?					?	?

	SEDIMENT	TEMPERATURE	DEWATERING	SALTS	NUTRIENTS	COLIFORMS	LOW DISSOLVED OXYGEN	ACID MINE WATER AND TOXIC METALS	OIL & GREASE, PHENOLS, COLOR	ARSENIC AND FLUORIDE FROM YNP	MISCELLANEOUS	TOTAL MILES DEGRADED IN THE BASIN	TOTAL MILES DEGRADED IN THE BASIN BY POINT-SOURCE
UPPER CLARK FORK	75*		110*		60*		80	84*				360	0
LOWER CLARK FORK	104*					20*					2 (N <sub>2</sub> from dams)	120	43
FLATHEAD	55				30*	5 40					5 (flow & to fluct. from dam)	120	8
KOOTENAI	12*										50 (N <sub>2</sub> from Libby Dam)	60	0
ST. MARY'S												?	?
TOTAL	2,512	630	860	1,400	520	440	100	190	30	185	60	4,015	177

\* indicates overlap of degradation causes

? status unknown

1. Construction has started which should correct 15 miles.
2. Construction has started which should correct 76 miles.
3. Construction has started which should correct 80 miles.
4. Construction has started which should correct 3 miles.
5. Construction has started which should correct 30 miles.

200 miles.

## WATER QUALITY STANDARDS

### 1. State Legislation

Section 69-4808.2, R.C.M. 1947 outlines the duties of the Board of Health and Environmental Sciences with respect to Montana's water pollution control laws. The first portion of subsection (1) of Section 69-4808.2 states:

*The board shall:*

- (a) Establish and modify the classifications of all water in accordance with their present and future most beneficial uses.*
- (b) Formulate standards of water purity and classification of water according to its most beneficial uses, giving consideration to the economics of waste treatment and prevention.*
- (c) Review from time to time, at intervals of not more than three (3) years, established classifications of water and standards of water purity and classification; and*
  - (ii) in revising classifications or standards or in adopting new classifications or standards, the board may not so formulate standards of water purity or classify any state waters as to lower any water quality standard applicable to state water below the level applicable under the classification or standards adopted by the state water pollution control council under Section 69-4813.*
  - (iii) The board shall require that any state waters, whose existing quality is higher than the established water quality standards, be maintained at that high quality unless it has been affirmatively demonstrated to the board that a change is justifiable as a result of necessary economic or social development and will not preclude present and anticipated use of these waters; and*

- (iv) *The board shall require any industrial, public, or private project or development, which would constitute a new source of pollution or an increased source of pollution to high quality waters, referred to in subsection (1)(c)(iii), to provide the degree of waste treatment necessary to maintain that existing high water quality.*

## 2. Review of Past Program

MAC 16-2.14(10)-S14480 WATER QUALITY STANDARDS is an administrative rule adopted by the Board of Health and Environmental Sciences which contains water-use classifications for all of Montana's surface waters and the water-use descriptions and water quality criteria for each classification. The water quality criteria contained in the standards define the minimum water quality conditions and waste treatment requirements needed in order to protect, maintain, and improve the quality and potability of the state's surface water. The water-use descriptions and water quality criteria for nearly all of Montana's rivers and streams provide protection of the quality of the surface water for public water supplies, wildlife, fish and aquatic life, agriculture, industry, recreation, and other beneficial uses.

The first water quality criteria and stream-use classifications were adopted following the enactment of Montana's first comprehensive water pollution control law in 1955. The original water quality standards were reviewed and revised in 1967 in accordance with requirements established by the Federal Water Quality Act of 1965. An anti-degradation clause was added to the water quality standards during this revision, and this anti-degradation policy was subsequently included as part of the state law by the 1971 legislature. The Federal Water Pollution Control Act Amendments of 1972 also requires states and the Environmental Protection Agency to extensively review water quality standards and make necessary changes. The changes required in Montana's water quality standards were adopted by the Board of Health and Environmental Sciences on July 13, 1973, and became effective on November 4, 1973. After the 1973 standards were in use for a short time, several errors were detected which needed to be corrected. These corrections were made by the Board of Health and Environmental Sciences in July, 1974, following a public hearing, and the revised water quality standards became effective in September of 1974.

Although "state waters" defined in the water pollution control law applies to both surface and underground waters, regulations have never been established or adopted for groundwater standards. Primary emphasis in the past has been placed on surface waters with investigations of groundwater pollution limited to areas of known concern. During fiscal year 1976 a grant was received from EPA specifically for developing groundwater standards, and work immediately got underway to develop proposed groundwater regulations. Development of groundwater regulations is a more complex issue than that encountered with surface water regulations, and therefore will require far more time, study and development.

### 3. Five Year Strategy

It is the intent of the Water Quality Bureau to review on a continuing basis the water quality standards; to have them reviewed at least every three years by the Water Pollution Control Advisory Council; and to submit revisions to the Board of Health and Environmental Sciences where the need is shown for changes.

The state's "anti-degradation statement" which is part of its water pollution control act needs to be further defined in a formal policy adopted by the Board of Health and Environmental Sciences. This will provide further guidance to the bureau and others who become involved with interpretation of the statement. The bureau has undertaken the task of developing a recommended anti-degradation policy for review by the advisory council and consideration for adoption by the Board. If adopted, the policy would be periodically reviewed by the bureau to determine its acceptability and effectiveness.

Groundwater standards will be developed, reviewed by the Water Pollution Control Advisory Council, and presented to the Board of Health and Environmental Sciences for their review and adoption. The proposed standards will also incorporate the needs of the public water supply program to assure compliance with the Federal "Safe Drinking Water Act of 1973" as it relates to underground waters. The standards after adoption will be periodically reviewed and assessed for needed changes by the bureau and submitted to the Water Pollution Control Advisory Council for their review and suggested changes at least every three years. When changes are needed, these recommendations will be submitted to the Board of Health and Environmental Sciences for their review and proposed adoption.

#### 4. Proposed Fiscal Year 1977 Program

The following schedules are proposed:

##### (a) Surface Water Standards

Review of standards by bureau - Oct. through Dec. 1976

Review by Advisory Council - January and February, 1977

Recommendations to Board of Health and Environmental  
Sciences (if changes are deemed appropriate) -  
May, 1977

Notice of public hearing - June, 1977

Public hearing - July, 1977

Official adoption of revisions - September, 1977

##### (b) Anti-degradation Policy

Completion of development of proposed policy by  
bureau - October, 1976

Review by Advisory Council - Nov. and Dec., 1976

Recommendations to Board - January, 1977

Notice of public hearing - February, 1977

Public hearing - March, 1977

Official adoption of policy - April, 1977

##### (c) Underground Water Standards

Same schedule as surface water standards described in  
(a) above.

The extended September, 1977 deadline for the adoption of revisions to the surface and underground water quality standards is requested due to a possibility for requests by the 1977 legislature for changes in the water pollution control laws which, if passed, could affect the standards.

## MUNICIPAL CONSTRUCTION GRANT PROGRAM

### 1. Past Program

With passage of the Water Pollution Control Act Amendments of 1972, it became mandatory for all municipal wastewater discharges to receive a minimum of secondary treatment. Montana's Water Quality Standards previously required secondary treatment; however, no limits were established to define secondary treatment.

To assist communities in achieving the goal of meeting secondary treatment requirements, the federal act appropriated \$18 billion for the construction grant program. Of the total, Montana received \$3,324,000 in fiscal year 1973, \$4,986,000 in fiscal year 1974, \$7,534,600 in fiscal year 1975 and \$12,378,200 in fiscal year 1976.

Construction grant funding is made available to communities needing new or improved treatment facilities, sewage collection systems, interceptor sewers, and for correction of infiltration/inflow problems. Since the needs in Montana outweigh the available funds, a priority system for fund allocation is utilized. Montana's priority system considers sewage treatment to be of the highest priority except in cases where there is an extreme public health hazard.

Using this priority system, a priority list containing all projects voicing a need is developed at least annually. Grant monies are then obligated to the top communities on the list until the annual allocation is expended.

For projects using fiscal year 1975 and later funds, the grant process is divided into three steps. Step 1, called facilities planning or Section 201 planning, is a detailed planning effort aimed at providing a recommended solution to the particular problems of the community in question. Included in this plan is an analysis of the existing sewer system and treatment facility, a probe of the town's anticipated development and growth trends, a comparison of the economics and effectiveness of all available treatment alternatives, and an environmental assessment of the solutions. Finally, by compiling all of the above infor-

mation and comparing advantages and disadvantages, a recommended solution is given. If the plan receives the approval of the reviewing governmental agencies, the grant may be amended to provide for Step 2 expenses.

Step 2 concerns itself with the actual design or preparation of plans and specifications of the selected treatment system. Following governmental review and approval of the plans and specifications, the grant may be amended again to provide for Step 3 expenses. The majority of the project costs are associated with this step--construction. Eligible costs in all three steps are funded 75 percent by the Environmental Protection Agency.

Public participation is encouraged throughout the grant process. Public hearings are held before each priority list revision enabling those with suggested changes to be heard. Hearings and meetings throughout the facilities planning stage insure that the public interest is being served. Ultimately, the citizens affected will decide whether or not to support the entire project with their tax dollars.

The Water Quality Bureau is involved with the communities and project consulting engineers throughout the life of these projects. Each year's priority list and estimated cost requirements are determined by this office. After selecting the communities to receive grant assistance, bureau personnel meet directly with town councils and their consultants to explain the program and the application procedure. The bureau is actively involved through the Step 1 phase, offering assistance when possible and reviewing and approving the final plan prior to its adoption.

In 1974, the bureau was given the authority from EPA to review and approve plans and specifications for construction grant projects. Throughout Step 3, our duties include monitoring cash flow to the projects, reviewing and approving contract change orders, and making construction inspections. Following project completion, the bureau reviews and approves operation and maintenance manuals to insure that the many dollars invested will not be wasted because of inadequate operational control by the communities. The bureau also assumed responsibility for some of the review of the facility plans during fiscal year 1976.

## 2. Five Year Strategy

Attainment of long range goals for the construction grant program is dependent upon available manpower, congressional funding allocations, changes in municipal treatment requirements, and other factors having profound effects on the program.

It is the bureau's goal to see that federal funding at the 75 percent level is provided and that construction is completed as expeditiously as is possible on all of the state's municipal discharges that presently need upgrading. Furthermore, it is hoped that funding can be provided for a portion of the communities needing new or improved sewerage systems.

Another goal of the bureau is to provide an effective operation and maintenance assistance program. With this tool, the millions of dollars invested in sewage treatment plants will not be wasted. The combined effect of these goals will assist in achieving the ultimate objective of the bureau--maintenance of high quality waters in the state.

The construction grant program may be enhanced by passage of the Cleveland-Wright Amendment to P.L. 92-500 presently being considered by Congress. This would give the states greater administrative authority in the construction grants program and allow the states to utilize a small percentage of the construction grant funds for administration of the program. This would enable the state to devote more manpower to the program and eliminate major duplication with EPA that presently exists while providing more effective utilization of total manpower resources and expedite the processing and construction of projects.

## 3. Proposed Fiscal Year 1977 Program

The Montana priority system for fiscal year 1977 for EPA construction grants is attached as Appendix A. The priority list of all communities voicing needs is shown as Appendix B. The bureau has established the following goals for the construction grant program:

- (1) Obligate all remaining fiscal year 1976 funds during the year.
- (2) Establish greater communication with the communities, consultants and EPA throughout the project in an attempt to promote more efficient project progression.

- (3) Strive for more public input on individual projects.
- (4) Perform operation and maintenance visits to assist with operational problems.

At the present time it appears possible that no additional allocation will be made by Congress for fiscal year 1977. Obligation of the available funding from prior years' allocations to Montana will be completed probably in the spring of 1977. Unless additional appropriations are made, progress in Montana's program will be severely restricted.

A summary of projected outputs is shown in Table 2. In order to achieve these goals, it will be necessary for all parties (community, consultant, state, EPA) to work closely and avoid unnecessary delay. At present, the bureau does not have the needed manpower to fulfill these goals. It is hoped that at least one additional man-year will be added this year.

Estimated scheduling to be followed in fiscal year 1977 is shown in Table 3.

TABLE 2. SUMMARY OF FISCAL YEAR 1977 CONSTRUCTION  
GRANT ACTIVITIES - OUTPUTS

PROBABLE FISCAL YEAR 1977 CONSTRUCTION GRANT OFFERS

<u>Step</u>	<u>Number</u>	<u>Amount</u>
1	0	0
2	28	1,122
3	30	10,175

FACILITY PLAN REVIEW FOR CONSTRUCTION GRANTS

	<u>Achieved FY76*</u>	<u>Planned FY77</u>
Review	13	21

PLANS AND SPECIFICATIONS REVIEW FOR CONSTRUCTION GRANTS

	<u>Achieved FY76*</u>	<u>Planned FY77</u>
Review	10	27

OPERATION AND MAINTENANCE MANUAL REVIEW  
FOR CONSTRUCTION GRANTS

	<u>Achieved FY76*</u>	<u>Planned FY77</u>
Review	8	9

TABLE 3. ESTIMATED CONSTRUCTION GRANT SCHEDULING

APPLICANT NAME & NO.	FY76 (\$1,000)			FY77 (\$1,000)				TOTAL
	3RD QUARTER	4TH QUARTER	TRANSITION QUARTER	1ST QUARTER	2ND QUARTER	3RD QUARTER	4TH QUARTER	
Butte - C 300221	150 (Step 2)				2,500 (Step 3)			2,650.
Victor - C 300202		25 (Step 2)		360 (Step 3)				385.
Poplar - C 300204	30 (Step 2)			300 (Step 3)				330.
Billings - C 300205	16 (Step 2)		150 (Step 3)					166.
Eureka - C 300218		30 (Step 2)		360 (Step 3)				390.
Three Forks - C 300200	11 (Step 1-I)	5 (Step 2 rehab)	40 (Step 3 rehab)	45 (Step 2)		310 (Step 3)		411.
Stevensville - C 300222		16.5 (Step 2)		300 (Step 3)				316.5
Hardin - C 300236		40 (Step 2)		350 (Step 3)				390.
Miles City - C 300203			45 (Step 2)		700 (Step 3)			745.
Thompson Falls - C 300216		5.9 (Step 1-I)	12 (Step 2)	100 (Step 3)				117.9
Havre East - C 300261	5 (Step 1)			30 (Step 2)		300 (Step 3)		335.
Whitefish - C 300206			35 (Step 2)			525 (Step 3)		560.
Columbia Falls - C 300241								-
Polson - C 300242								-
1. Big Sky - C 300207			10 (Step 2)		50 (Step 3)			60.
Bozeman - C 300208	2.5 (Step 2 rehab)	28 (Step 3 rehab)	40 (Step 1-I)	50 (Step 2 rehab)		100 (Step 3 rehab)	250 (Step 2)	470.5
Anaconda - C 300243			25 (Step 1)			150 (Step 2)		175.
Bigfork - C 300209								-
Livingston - C 300210	115 (Step 3 rehab)		100 (Step 2)			1,400 (Step 3)		1,615.
Oillon - C 300211		5 (Step 2 rehab)	40 (Step 3 rehab)	25 (Step 2)		300 (Step 3)		370.
Libby - C 300212		9 (Step 1-I)		10 (Step 2 rehab)		50 (Step 3 rehab)	50 (Step 2)	119.
Hamilton - C 300213		18 (Step 1-I)		7 (Step 2 rehab)	40 (Step 3 rehab)	50 (Step 2)		115.
Red Lodge - C 300214				10 (Step 2 rehab)	50 (Step 3 rehab)	30 (Step 2)		90.
Big Timber - C 300244								-
Choteau - C 300245								-
Townsend - C 300215	11 (Step 1-I)	6.3 (Step 2 rehab)	48 (Step 3 rehab)	50 (Step 2)		500 (Step 3)		615.3
Ronan - C 300262								-
Boulder - C 300217				5 (Step 2 rehab)	20 (Step 3 rehab)	25 (Step 2)	400 (step 3)	450.
Whitehall - C 300220		2.3 (Step 2 rehab)	40 (Step 3 rehab)	25 (Step 2)		250 (Step 3)		317.3
Kalispell - C 300263			20 (Step 1)					20.

APPLICANT NAME & NO.	FY76 (\$1,000)			FY77 (\$1,000)				TOTAL
	3RD QUARTER	4TH QUARTER	TRANSITION QUARTER	1ST QUARTER	2ND QUARTER	3RD QUARTER	4TH QUARTER	
Manhattan - C 300223			10 (Step 2 rehab)	65 (Step 3 rehab)		40 (Step 2)		115.
Sheridan - C 300225					25 (Step 2)			25.
Sunburst - C 300226		5 (Step 1)						5.
Asarokee - C 300227	5.6 (Step 1-1)							5.6
Darby - C 300228						20 (Step 2)		20.
Eanis - C 300229				20 (Step 2)		100 (Step 3)		120.
Drummond - C 300247		3 (Step 1)						3.
East Glacier - C 300230				30 (Step 2)			450 (Step 3)	480.
Roberts - C 300231				5 (Step 2 rehab)	20 (Step 3 rehab)	30 (Step 2)		55.
Hobson - C 300232								-
Basin - C 300264				150 (Step 3)				150.
Lewistown - C 300234				10 (Step 2 rehab)	50 (Step 3 rehab)	50 (Step 2)		110.
Laurel - C 300235				10 (Step 2 rehab)	50 (Step 3 rehab)	50 (Step 2)		110.
Harlowton - C 300237								-
Browning - C 300248	14.6 (Step 1)							14.6
Chester - C 300249			10 (Step 1)					10.
St. Ignatius - C 300250								-
Hot Springs - C 300251		10 (Step 1)						10.
Rocker - C 300255			10 (Step 1)					10.
Deer Lodge - C 300267								-
Wolf Point - C 300257								-
Baker - C 300258								-
Forsyth - C 300259								-
Chinook - C 300265								-
East Helena - C 300260			5 (Step 2 rehab)	25 (Step 3 rehab)		20 (Step 2)		50.
Cut Bank - C 300266								-
TOTALS	360.7	209	640	2,342	3,505	4,300	1,150	12,506.7



## MUNICIPAL OPERATIONS

### 1. Past Program

An integral part of municipal sewage treatment is adequate operation and maintenance of the facilities after construction is completed. It does little good for communities to spend millions of dollars for treatment facilities only to have them improperly operated and maintained with poor treatment the net result. For many years, the department has conducted an inspection program for municipal sewage treatment facilities in conjunction with water supply inspections. For the most part, this has consisted of an annual visit to the treatment site by an engineer in the presence of the responsible treatment plant operator. Technical assistance was provided by the department engineer when specific problems were observed during inspections.

In an effort to further improve operation and maintenance, the bureau, in cooperation with Montana State University at Bozeman, has conducted a water and wastewater treatment operator school each year. During recent years, this school has been extended from two and one-half days to five days. About 80 operators attend each year.

In addition, classroom instruction was provided to operators in selected areas, and on-the-job training was provided by two operator training instructors in conjunction with a special federal grant program provided specifically for this purpose in 1971. These federal training grants expired during fiscal year 1975. The 1975 legislature approved and funded one operator training instructor for fiscal years 1976 and 1977.

In 1971, an operators' newsletter, which is published three times per year, was initiated in cooperation with the Montana Section of the American Water Works Association and the Water Pollution Control Association. The newsletter provides information on events occurring around the state concerning water and wastewater facilities, relates experiences of other operators, providing solutions and specific problems and provides information on new laws and regulations affecting the operator's community.

One-day operator seminars were held at Great Falls, Miles City, Sidney, Missoula, Laurel, Kalispell, Wolf Point, and Glendive during fiscal year 1976. About 215 municipal sewage treatment and municipal water supply personnel attended these seminars. The seminars provided information on permits, the new "Safe Drinking Water Program", operator certification and other topics of immediate interest.

The bureau cooperated with the city of Billings, Department of Labor, and EPA during fiscal year 1976 to initiate a concentrated training program for 13 operators at Billings. The primary purpose of this program was to train operators for the new Billings secondary sewage treatment facility.

During fiscal year 1976, the bureau and Laboratory Division conducted two one-week laboratory personnel training sessions for municipal and other personnel doing self-monitoring analyses for municipalities. Many of the personnel trained in this program are just starting to do laboratory work.

## 2. Five Year Strategy

Considerable effort will be expended in assisting operators at new mechanical secondary treatment plants coming on line to overcome operational problems. The assistance of EPA Regional technical assistance personnel will be requested for the more complex problems which arise. In order to meet the effluent limits already established or which will be established, the plants will need to be operated at high efficiencies at all times.

With new mechanical secondary treatment plants coming on line, there will be a need for approximately 30 new operators. Existing operators at these plants will also need advanced training to operate the secondary treatment facilities. The major training effort will be devoted towards these new facilities. The video tape program appears to have the greatest potential for reaching the greatest number of operators at these facilities. As the program further develops, there should be better tapes available for this purpose which should provide a more effective program.

The one-day seminars will continue as they provide operators training where municipal government travel budgets limit or prohibit attendance at a centralized training course. The five-day school at Bozeman will continue to be held for those desiring to receive more intensive training. The 22-week training program will probably be given at two or

three locations during this period. The tape-slide program will be provided to those in isolated locations and who wish to receive training at home. The newsletter will be continued and will be sent to all operators.

A second operator training instructor position will be requested to begin in fiscal year 1978. This position would be federally funded through the "Safe Drinking Water Act". The present instructor is utilized for training both water supply and sewage treatment operators. If the second instructor can be obtained, one instructor would be responsible for one portion of the state and the second for the remainder. There are a total of about 800 operators in the state who are responsible for operating water supplies and sewage treatment facilities for municipalities, private facilities such as trailer courts and industrial wastewater treatment facilities. This is a program which needs to be expanded to reach a greater number of operators both through training and direct on-the-job assistance.

The operator certification program will be continued and expanded to include a greater number of the private facilities. The Board of Water and Wastewater Operator Certification will consider adopting the Association of Boards of Certification (ABC) program. The ABC is attempting to establish a uniform certification program throughout the United States. The effects of adopting this program on Montana operators are presently being evaluated. The needed changes to Montana's certification law and regulations to accommodate this change will also be evaluated.

### 3. Proposed Fiscal Year 1977 Program

Operation and maintenance inspections will be performed for at least 20 major municipal and 10 minor municipal facilities where an EPA Form 7500-5 or equivalent form has been completed. Routine inspections will be made of at least 90% of the remaining municipal treatment facilities. Assistance will be provided at plants having special problems by bureau or EPA personnel as time permits.

The annual water and wastewater school will be held at Bozeman November 15-19, 1976. The newsletter to operators will be continued with three issues expected to be published. Six one-day seminars for water and wastewater operators are planned. Although not a part of municipal operations, two one-day training courses are planned for campground and mobile home court operators.

The video tape program will be continued at Billings, Kalispell and Missoula. The video tape program at Laurel and Conrad started in fiscal year 1976 will be completed and initiated at two additional cities. The home study slide-tape cassette program will be continued. Ten operators are expected to participate in this program.

The following summarizes anticipated operator training activities:

Operators in video tape programs (7 cities) -	58
Operators attending annual school -	80
Operators attending one-day seminars -	150
Operators attending trailer court-motel	
one-day training sessions	50
Operators completing home study courses -	10

The following summarizes the need for new municipal sewage treatment plant operators for fiscal year 1977.

New construction -	15
Staff increases -	5
Replacement -	40

The operator certification program is expected to continue with administration of the program provided by the bureau and guidance provided by an advisory board established by law. Examinations will be given twice during the year for all classes, while examinations for the lower two classes will be given throughout the year. It is expected that about 200 examinations will be given for all classes. Also continued will be the certification program for water and wastewater operators of large trailer courts, motels, and truck stops having their own water supply and sewage treatment systems. Evaluation of ways to change the state's present certification program to more closely align it to the ABC program will be continued.

## WASTE DISCHARGE PERMITS

### 1. State Legislation

Section 69-4806, R.C.M. 1947 states in part:

*It is unlawful to:*

- (2) *carry on any of the following activities without a current permit from the department:*
  - (a) *construct, modify, or operate a disposal system which discharges to any state waters; or*
  - (b) *construct or use any outlet for the discharge of sewage, industrial wastes, or other wastes to any state waters; or*
  - (c) *discharge sewage, industrial wastes, or other wastes into state waters; or*
- (3) *violate any limitation imposed by a current permit.*

Section 69-4809.1, R.C.M. 1947 states in part:

- (1) *The department shall:*
  - (a) *Issue, suspend, revoke, modify, or deny permits to discharge sewage, industrial wastes, or other wastes to state waters, consistently with rules made by the board;*
  - (b) *Examine and approve or disapprove plans and other information needed to determine whether a permit should be issued or suggest changes in plans as a condition to the issuance of a permit;*
  - (c) *Clearly specify in any permit any limitations imposed as to the volume, strength, and other significant characteristics of the waste to be discharged;*

### 2. Review of Past Program

A waste discharge regulation was adopted for sanitary sewage and industrial waste discharges to surface waters,

and a formal permitting program was initiated during 1968 for these wastewaters. Under the program, 81 industrial and 135 sanitary sewage waste discharge permits were issued. The larger dischargers were required to submit monitoring information on their effluent. During 1972, a waste discharge permit regulation for confined animal feeding was adopted by the board. This regulation required all operations feeding cattle, swine, sheep or other livestock for marketing purposes within any confined area or enclosure which is not normally used for raising crops or as pasture, which, at any time, discharges drainage water or manure to a state water or is causing or contributing to air pollution, to have a waste discharge permit. Permits were required of all new or expanding operations, and existing operations were required to have a permit before June 24, 1974. Under the program, several meetings were held with feeder organizations to explain the permit program, and 32 permits were issued under this program.

The Federal Water Pollution Control Act Amendments of 1972, P.L. 92-500, established the National Pollutant Discharge Elimination System whereby the federal government is authorized to issue permits for the discharge of pollutants into the nation's streams. The act provides that states with adequate water pollution control programs may take over administration of the federal permit program in their state. To avoid duplication of effort by state and federal governments, the state decided to take steps to administer the NPDES program. As the first step, the state law was revised during the 1973 legislative assembly to give definite authority for requiring monitoring, additional enforcement authority, including increased fines, and permission for the state to establish effluent and pretreatment standards. In addition, the Board of Health and Environmental Sciences adopted a rule entitled the Montana Pollutant Discharge Elimination System (MPDES) on January 18, 1974. The MPDES rule became effective on March 8, 1974 and provided the additional program elements needed by the state to comply with rules and regulations promulgated by the administrator of the U. S. Environmental Protection Agency pursuant to Section 304(h) of the act. Section 304(h) relates to the state program elements necessary to administer the NPDES program.

In accordance with Section 402 of the act, Governor Thomas L. Judge of the state of Montana applied to the administrator of EPA for permission to administer the

NPDES program on March 11, 1974. Following a public hearing on April 20, 1974, the administrator approved the state's program, and the state began issuing waste discharge permits under the MPDES in Montana on June 10, 1974.

### 3. Five Year Strategy

The department will strive to have all major dischargers and all minor dischargers, in need of an MPDES permit, under MPDES permit during this period. MPDES permits are those permits issued in Montana by the department under the NPDES permit program, which was established pursuant to Section 402 of P.L. 92-500, and all NPDES permits issued in Montana by EPA prior to approval of the state's permit program. The department expects to have about 26 major municipal and 105 minor municipal dischargers under MPDES permit through the period. In addition, the department expects to have about 15 major non-municipal (industrial) and 180 minor non-municipal (including 100 industrial and bridge construction projects, 65 agricultural and fish farming, and 15 water treatment plants) dischargers under MPDES permit prior to fiscal year 1976.

The department will undertake an active compliance inspection program during the period. Emphasis will be placed on obtaining compliance with permit conditions by all major dischargers and attaining the most efficient treatment possible with existing waste treatment facilities. A compliance inspection of a waste treatment facility will either be in the form of a reconnaissance inspection, sampling inspection, operation and maintenance inspection, or technical assistance demonstration.

A reconnaissance inspection consists of a brief visit to a permittee made for at least one of the following purposes:

- (a) To observe the status of construction required by a permit.
- (b) Assess the adequacy of the permittee's self-monitoring program.
- (c) Check records.
- (d) Discuss permit requirements and give advice when appropriate on how to meet requirements.

A sampling inspection includes visits where samples are taken and analyzed in the laboratory for the purpose of determining the accuracy of a permittee's self-monitoring program and for checking compliance with effluent limitations contained in the discharge permit.

Operation and maintenance inspections will be designed to assess the adequacy of plant operation and maintenance, equipment and facility needs and may include effluent sampling. The inspection will result in completion of EPA inspection form 7500-5 for mechanical plants and the department inspection form for lagoon facilities.

Technical assistance demonstrations will be visits of two or more days conducted to demonstrate methods, techniques, and procedures for identifying and correcting deficiencies in plant operation in order to improve the overall performance and efficiency of the treatment facility.

Inspections of industrial dischargers will consist of either reconnaissance inspections or sampling inspections. For municipal dischargers, operation and maintenance inspections and technical assistance demonstrations will be conducted as well as sampling and reconnaissance inspections. Realistically, there will be very little difference between a reconnaissance inspection and an operation and maintenance inspection for a municipal facility. The department intends to conduct a sampling inspection of all major industrial dischargers at least two times during each fiscal year in the period. Major dischargers which appear to be in violation of their permits may be inspected more frequently than indicated above.

Minor industrial dischargers will be compliance inspected as manpower and funds allow. Minor dischargers which appear to be in violation of their permit will be inspected for compliance as desired to achieve compliance with permit conditions and/or secure evidence for enforcement action.

There are approximately 170 public sewer systems in Montana which will be inspected during each fiscal year, even though not all of the systems have discharges. These inspections will be of the operation and maintenance or reconnaissance type.

Either sampling inspections, reconnaissance inspections or operation and maintenance inspections will be conducted at all major municipal facilities as well as most of the minor municipal facilities during each fiscal year. In addition, sampling inspections will be conducted on a few selected minor municipal dischargers. Emphasis will be placed on inspection and sampling those discharges with wastewater treatment facilities considered to be capable of, or marginally capable of, meeting the national secondary treatment standards.

The department will attempt to review the periodic self-monitoring information received by the department in a timely manner and prepare for eventual inclusion into a computerized data storage system. The self-monitoring information will be reviewed during the scheduling of compliance monitoring activities, and those dischargers that appear to be violating the effluent limitations of their MPDES permits will be monitored for compliance as discussed above.

It is the goal of the department to insure that best practicable control technology and best available control technology effluent limitations are met by all non-municipal dischargers by July 1, 1977 and July 1, 1983, respectively, as required by the act and further defined by EPA regulations. It is the goal of the department to insure that the national secondary treatment standards and that best practicable control technology are met by all municipal dischargers by July 1, 1977 and July 1, 1983, respectively, as required by the act and further defined by EPA regulations. It is also the goal of the department to achieve no discharge of pollutants to state waters by July 1, 1985.

#### 4. Proposed Fiscal Year 1977 Program

The department intends to: (1) process all MPDES permit applications received, and (2) renew, during fiscal year 1977, all permits that expire during fiscal year 1977. Those permits that expire during the first quarter of fiscal year 1978 will also be processed during this fiscal year.

The department does not expect to receive any new municipal permit applications during fiscal year 1977. However, it is expected that approximately 11 expiring major municipal and 37 minor municipal permits will be processed and renewed

during the fiscal year. The department expects to process applications from approximately 85 minor non-municipal applicants (including 15 feedlots, 10 irrigation returns, 40 placer mining and 20 construction) during the fiscal year. In addition, as high as 50 to 100 fish farming operations may be in need of a permit. Processing of the irrigation return flow applications will be delayed until EPA regulations affecting the same are finalized. Such permits would be issued with the expressed intention of monitoring such discharges to collect data as to their quality and quantity. Recent revisions in the federal regulations regarding animal confinement facilities will be considered on new applications but will not in our opinion necessitate reissuance of any permits. The MPDES rule applies to any animal confinement facility, without regard to numbers, which discharges to state waters. Those having capacity for less than 1,000 head would have installed waste control facilities based on either a 10 or 25 year - 24 hour rainfall occurrence. These facilities would not be discharging pollutants through a man-made ditch or other device and waters of the United States would not pass directly through the feedlot or come in direct contact with the animals in confinement. It is expected that approximately two expiring major non-municipal and 19 minor non-municipal permits will be processed and renewed during the fiscal year.

The department will undertake an active compliance inspection program during the fiscal year. The department intends to conduct a sampling inspection of all fifteen major industrial dischargers at least twice during the fiscal year. Twelve major municipal dischargers will be sampled during the fiscal year. The remaining 14 major municipal dischargers will either be reconnaissance or operation and maintenance inspected. Minor dischargers which appear to be in violation of their permit will be inspected for compliance as necessary to achieve compliance and/or secure evidence for enforcement action. Other minor dischargers will be compliance inspected as manpower and funds allow.

During the fiscal year, the department will strive to improve its programs for: (1) timely review and utilization of self-monitoring reports, and (2) tracking of compliance schedule progress.

The department's MPDES permit program is presently suffering from a lack of manpower. The areas that will

not be efficiently and, in some cases, adequately handled during the fiscal year because of a lack of manpower are prioritized as follows:

- (1) New Permit Issuance
- (2) Permit Renewals
- (3) Permit Enforcement
- (4) Self-Monitoring Report Review

The permit program desperately needs at least one additional professional staff member in order to operate adequately. Two additional professional staff members could make the program efficient and more effective. The above manpower needs relate to priorities (1), (2), and (4) only. Additional manpower is needed in the enforcement area also. The manpower needs for enforcement are addressed in the Enforcement Section of this plan.

The revised major non-municipal and municipal discharger lists are attached as Tables 4 and 5, respectively.

TABLE 4. MAJOR MUNICIPAL DISCHARGERS

<u>Discharger</u>	<u>Permit No.</u>	<u>Basin</u>
City of Bozeman	MT-0022608	Upper Missouri
City of Dillon	MT-0021458	Upper Missouri
City of Missoula	MT-0022594	Lower Clark Fork
Silver Bow Metro SID #1	MT-0022012	Upper Clark Fork
City of Hamilton	MT-0020028	Upper Clark Fork
City of Deer Lodge	MT-0022616	Upper Clark Fork
City of Kalispell	MT-0021938	Flathead
City of Columbia Falls	MT-0020036	Flathead
City of Polson	MT-0020559	Flathead
City of Whitefish	MT-0020184	Flathead
City of Billings	MT-0022608	Upper Yellowstone
City of Livingston	MT-0020435	Upper Yellowstone
City of Laurel	MT-0020311	Upper Yellowstone
City of Great Falls	MT-0021920	Missouri-Sun-Smith
City of Helena	MT-0022641	Missouri-Sun-Smith
City of Havre	MT-0022535	Milk
City of Glasgow	MT-0021211	Milk
City of Miles City	MT-0020001	Lower Yellowstone
City of Baker	MT-0022381	Lower Yellowstone
City of Glendive	MT-0021628	Lower Yellowstone
City of Libby	MT-0020494	Kootenai
City of Hardin	MT-0020834	Middle Yellowstone
City of Conrad	MT-0020079	Marias
City of Cut Bank	MT-0020141	Marias
City of Lewistown	MT-0020044	Middle Missouri
City of Wolf Point	MT-0020532	Missouri-Fort Peck

TABLE 5. MAJOR NON-MUNICIPAL DISCHARGERS

<u>Discharger</u>	<u>Permit No.</u>	<u>Basin</u>
The Anaconda Company	MT-0000493	Missouri-Sun-Smith
Phillips Petroleum Co.	MT-0000434	Missouri-Sun-Smith
The Anaconda Company	MT-0000183	Upper Clark Fork
The Anaconda Company	MT-0000191	Upper Clark Fork
Hoerner Waldorf Corp.	MT-0000035	Lower Clark Fork
J. R. Daily	MT-0000094	Lower Clark Fork
Great Western Sugar	MT-0000281	Upper Yellowstone
Burlington Northern, Inc.	MT-0000388	Upper Yellowstone
Farmers Union Central Exchange	MT-0000264	Upper Yellowstone
Continental Oil Company	MT-0000256	Upper Yellowstone
Exxon	MT-0000477	Upper Yellowstone
Montana Power Company	MT-0000396	Upper Yellowstone
Holly Sugar Company	MT-0000248	Lower Yellowstone
Montana-Dakota Utilities	MT-0000302	Lower Yellowstone
St. Regis Paper Company	MT-0000221	Kootenai



## DREDGED OR FILLED MATERIALS DISCHARGE PERMITS

### 1. Past Program

Section 6(g) of the state's Water Quality Standards (MAC 16-2.14(10)-Sl4480) states:

- (g) *No wastes are to be discharged and no activities conducted which either alone or in combination with other wastes or activities, will cause turbidities to exceed those allowed by specific water quality criteria; provided, short-term activities necessary to accommodate essential dredging, channel or bank alterations, stream diversions or other construction where turbidities in excess of the criteria are unavoidable, may be authorized by the department under conditions as it may prescribe.*

In 1974, the Water Quality Bureau implemented Section 6(g) and began review of proposed construction activities causing unavoidable increases in turbidities exceeding the water quality criteria. Section 6(g) was adopted to permit essential construction activities where short-term increases in turbidities would occur without them violating the specific water quality criteria. Restrictions or limitations can be imposed on authorizations to abate or minimize resulting turbidity increases.

In 1975, the legislature passed Senate Bill 310 known as the Streambed and Land Preservation Act of 1975. The Act prohibits unauthorized projects causing physical alterations or modifications of streams and establishes a review team to evaluate proposed projects. The review team determines if a proposed project is necessary and whether adequate safeguards are taken to protect the integrity of the stream and to minimize soil erosion and sedimentation; thereby protecting water quality and adjacent lands. The review team consists of a member of the District Supervisors, a representative of the Department of Fish and Game, and the applicant. Authorization from the District is required prior to commencement of a project.

To eliminate duplication of effort and still comply with the Water Pollution Control Act and Water Quality Standards,

it has been proposed to the Department of Fish and Game that they review all 310 projects with respect to compliance with provisions of the water pollution control laws and Section 6(g) (i.e., if turbidities above the water quality criteria are exceeded, or conditions and limitations prescribed by the team are adequate to protect long-term in-stream water quality standards). Necessary projects where turbidity and law violations would occur would be referred to the Water Quality Bureau for Section 6(g) authorization considerations. Authority for this cooperative agreement appears to be provided by Section 69-4827 which states:

*The council, board, and department may require the use of records of all state agencies and may seek the assistance of such agencies. State, county, and municipal officers and employees, including sanitarians and other employees of local department of health, shall co-operate with the council, board, and department in furthering the purposes of this chapter, so far as is practicable and consistent with other duties.*

Under this cooperative effort, the Fish and Game team members would function as "agents" of the Water Quality Bureau in reviewing the 310 projects for the Water Quality Bureau.

In 1975, the Corps of Engineers pursuant to Section 404 of P.L. 92-500 issued interim regulations for the discharge of dredged or fill materials in coastal and inland waters and wetlands. The Corps is initiating this program in three phases:

- Phase I - effective July 1, 1975 - to traditional navigable waters of the United States (this includes the Missouri River to its three forks, the Yellowstone River to Emigrant, and the Kootenai River).
- Phase II - effective July 1, 1976 - expanded to primary tributaries of navigable waters.
- Phase III - effective July 1, 1977 - expanded to other tributaries where the flow exceeds five cubic feet per second.

The state water pollution control agency under this program is to provide certification that water quality standards

and applicable effluent standards will be met before the project is authorized by the Corps (Section 401 of P.L. 92-500). The certification may be waived by not acting on the certification within a reasonable time period. However, approved projects must still meet the state's water quality standards.

## 2. Five Year Strategy

It is apparent from the above that a great amount of duplication by the Corps of Engineers, Environmental Protection Agency, Conservation Districts, Department of Fish and Game, and Department of Health and Environmental Sciences presently exists and that a concentrated effort is needed to eliminate duplication while still preserving the natural state of streams and minimizing effects on water quality. In addition, the Section 401 certification requirement will impose an unrealistic workload on the Water Quality Bureau for which it does not have adequate manpower. The most effective way of eliminating duplication appears to be a change of Section 404 to allow states which have dredge and fill legislation to assume that portion of the program where duplication exists (protection of wetlands should be retained as an element of the Corps of Engineers' program). Both SB 310 and Section 6(g) would provide adequate regulatory controls for dredge and fill projects and along with the proposed cooperative agreement with the Department of Fish and Game, would alleviate some of the Water Quality Bureau workload in reviewing all construction projects.

An alternative that might be considered if no change is made to Section 404 by Congress is for the bureau to waive certification pursuant to Section 401 by non-action and handle on a state level the stream construction projects utilizing SB 310 and the Department of Fish and Game as earlier proposed to review major projects for water quality effects. With the large number of permits which will be processed by the Corps and Conservation Districts, there is no way the bureau can perform its regulatory functions with the present manpower. It also appears to be an unwise use of manpower.

## 3. Proposed Fiscal Year 1977 Program Plan

If duplication of effort cannot be minimized during the remainder of fiscal year 1976 and the coming fiscal year, the bureau will continue with their attempts to accomplish Section 6(g) authorizations during fiscal year 1977. It is the bureau's intent to have worthy projects proceed as timely as possible and not to slow down projects due to lack of manpower capabilities.



## ENFORCEMENT

### 1. State Legislation

Section 69-4806, R.C.M. is the heart of Montana's water pollution control law. This section states:

*It is unlawful to:*

- (1) cause pollution as defined in section 69-4802(5), R.C.M. 1947, of any state waters or to place or cause to be placed any wastes in a location where they are likely to cause pollution of any state waters;*
- (2) carry on any of the following activities without a current permit from the department:*
  - (a) construct, modify, or operate a disposal system which discharges to any state waters; or*
  - (b) construct or use any outlet for the discharge of sewage, industrial wastes, or other wastes to any state waters; or*
  - (c) discharge sewage, industrial wastes, or other wastes into any state waters; or*
- (3) violate any limitation imposed by a current permit.*

### 2. Review of Past Program

Two administrative rules have been adopted by the Board of Health and Environmental Sciences which are key elements in Montana's water pollution control program. MAC 16-2.14(10)-S14480 contains Montana's water quality standards which describe in-stream water quality requirements for specified uses and serve as the primary means for defining pollution of surface waters. The Montana Pollutant Discharge Elimination System rule is contained in MAC 16-2.14(10)-S14460. This rule provides the mechanism for authorizing and controlling point source discharges to state waters.

Violators of Montana's water pollution control law or rule, permit, or order established or issued pursuant to the law could be subject to injunction, civil penalties

up to \$10,000 for each day of violation or criminal penalties with fines not to exceed \$25,000 per day of violation and/or imprisonment for not more than one year for an initial conviction and not more than \$50,000 per day of violation and/or imprisonment for not more than two years for subsequent violations.

The state attorney general is the statutory attorney for the department. The department attorneys have been commissioned as special assistant attorney generals to bring all civil action to court on behalf of the department. State law makes the county attorney the public prosecutor, and he is responsible for attending district court and conducting, on behalf of the state, all criminal prosecutions for public offenses and represents the state in all criminal matters and proceedings to which it is a party. The state attorney general has no authority to institute criminal actions in any counties of the state. This is the duty of the county attorneys.

Changes in department staffing were undertaken in fiscal years 1975 and 1976 in an attempt to establish a workable enforcement program. In fiscal year 1975, an additional attorney was added to the department legal unit who was able to devote approximately half of his time to enforcement of water quality programs. An enforcement coordinator was appointed within the Water Quality Bureau who devoted approximately 1/4 man-year to coordinating enforcement activities within the bureau. During fiscal year 1976, approximately one and one-half man-years was provided by the department for enforcement of water pollution control laws. This included one-half man-year (attorney) from the legal unit, one-half man-year from the enforcement coordinator and one-half man year support from the technical staff. The main goals for the past two years have been: (1) to develop uniform procedures and guidelines to aid the technical staff in investigation and follow up of violations and (2) to take action necessary to insure compliance with requirements of waste discharge permits. The manpower levels assigned to enforcement have not been sufficient to achieve either of the goals. The procedures, guidance, and training needed for enforcement has not been totally provided and timely enforcement of a significant portion of MPDES permit related violations cannot be achieved.

Abatement orders issued pursuant to Section 69-4809.1(1)(f) and compliance orders under Section 69-4820.1 are the most

effective administrative enforcement provisions available to the department. If an expanded enforcement program is developed, injunctive relief and penalties available through court action will become important program elements.

The status of the enforcement program as of May 1, 1976 is summarized as follows: twenty-six violation reports were submitted to the legal unit thus far in fiscal year 1976. Twelve compliance orders were prepared, with seven being delivered to date. Four abatement orders were served. Follow-up work is needed on 41 violation reports which have been sent to the legal unit. Additional follow-up work is needed on 30 administrative orders which have been issued by the department. Eight court complaints were initiated by the legal unit. Four cases have been settled, one was dropped, and two cases are still pending. Four violations requiring administrative orders and eight additional violations requiring filing of court complaints are pending in the legal unit. The technical staff in the Water Quality Bureau has eight violations pending which must be processed and submitted to the legal unit for possible court action. Three additional violations need administrative orders. Since August of 1976, 77 citizen complaints relating to water pollution problems have been received by the Helena office of the Water Quality Bureau. Forty of these complaints need investigation and/or follow up.

### 3. Five Year Strategy

Until the manpower deficiencies within this program are resolved, there is little hope for substantial enforcement of Montana's water pollution control laws and existing rules. Therefore, the five-year strategy must center on an attempt to obtain resources through (1) additional state or federal funds, or (2) reallocation of existing priorities and manpower for enforcement. The current water pollution control program attempts to administer and enforce a portion of existing state laws and rules. More specifically, regulatory activities are concentrated on gross violations of Section 69-4806(1) which are referred to the bureau by complaint, Section 69-4806(3) on permit violations, and significant violations of Section 69-4806 (2)(c) as it relates to state surface waters. With existing manpower limitations, little can be done to routinely monitor and patrol state waters to further administer and enforce Section 69-4806, R.C.M. 1947 and existing rules.

Experience gained during the past two years indicate the following staffing level would be needed to provide a

minimal enforcement program for the existing limited scope of bureau activities:

- (a) Attorney - one man-year
- (b) One full-time enforcement coordinator and one full-time technician level investigator in the Helena office.
- (c) One half-time technician level investigator at the Billings and Kalispell branch offices.

This recommended four man-year level of effort compares to the one and one-half man year level being provided. This does not include attorney's time which is needed for day-to-day questions requiring legal interpretation of state laws and regulations.

If an attempt is made to administer and enforce additional provisions of Sections 69-4806 and 69-4805, R.C.M. 1947, as is contemplated by current efforts being made to develop groundwater rules, an even greater manpower effort will be needed for adequate enforcement.

#### 4. Fiscal Year 1977 Program

Manpower for enforcement during fiscal year 1977 is expected to increase by switching of personnel from other duties. That is, three-fourths man-year of attorney time from the legal unit and one and one-half man-years available from the bureau technical staff. At this level of effort, the bureau will attempt to take enforcement action on major violations of Montana's water pollution control laws, water quality standards, and MPDES permits. EPA's legal assistance will be sought in some cases to further the state's enforcement program. A portion of enforcement resources available will be devoted to development of a non-degradation policy.

## OIL AND HAZARDOUS SPILLS CONTROL

### 1. State Legislation

Section 69-4823 (1), (2) and (7), R.C.M. 1947 provides the legal obligation for a State Oil and Hazardous Materials Pollution Control Contingency Plan to deal with removal, prevention and abatement of oil and hazardous substances spills affecting state waters.

Section 69-4823 states in part:

- (1) *A person who violates this chapter or a rule, permit, effluent standards, or order issued under the provisions of this act shall be subject to a civil penalty not to exceed ten thousand dollars (\$10,000). Each day of violation constitutes a separate violation.*
- (2) *A person who willfully or negligently violates section 69-4806, R.C.M. 1947, or any pretreatment standard established pursuant to this act is guilty of an offense and subject to a fine not to exceed twenty-five thousand dollars (\$25,000) per day of violation or by imprisonment for not more than one (1) year or both. Following an initial conviction under this subsection, subsequent convictions shall subject a person to a fine of not more than fifty thousand dollars (\$50,000) per day of violation, or imprisonment for not more than two (2) years, or both.*
- (7) *In a civil action initiated by the department under this act, the department may ask for and the court is authorized to assess a violator for the cost of the investigation or monitoring survey which led to the establishment of the violation, and any expense incurred by the state in removing, correcting or terminating any of the adverse effects upon water quality resulting from the unauthorized discharge of pollutants.*

### 2. Past Program

The Federal Oil and Hazardous Materials Pollution Contingency Plan was promulgated under Section 311 of the Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) and

is applicable to all waters of the United States. In addition to this federal plan, individual state plans are required by law. The state plan supplements the federal plan.

An Oil and Hazardous Materials Spill Contingency Plan was developed during fiscal year 1973 and was printed and distributed during fiscal year 1974. Oil spill inspections and reporting have been coordinated with the EPA, Department of Fish and Game, and the Oil and Gas Conservation Division of the Montana Department of Natural Resources and Conservation. During fiscal year 1974, substantial improvements were provided in the oilfields in the Clarks Fork of the Yellowstone River drainage. This area was the source of many of the spills which occurred in former years. The Montana Department of Health and Environmental Sciences participated in sponsoring the "Control of Oil and Other Hazardous Materials Spills Seminar" held on June 19-20, 1975 in Billings, Montana.

### 3. Five Year Strategy

Oil spill inspections and reporting will be coordinated with the EPA, Department of Fish and Game, the Oil and Gas Conservation Division of the Department of Natural Resources and Conservation and federal land resource management agencies. The bureau will also cooperate with adjacent states, EPA, and adjoining provinces of Canada to provide a regional contingency plan. Further work will be done in the oilfields to further determine pollutional effects of oilfield activities.

Each year sees improved communication between the bureau and industry. The bureau will continue to work toward improvement in this area and include not only industry but resource people in other state and local governmental units.

Oil producing areas in the state which have a history of spills will be inspected to evaluate the effectiveness of spill containment measures.

Thus far, oil has played the dominant role in developing spill countermeasures. However, it is anticipated that efforts regarding hazardous materials will be expanded.

### 4. Proposed Fiscal Year 1977 Program

The major emphasis will be on improved response to spills through better communication between persons, industry and agencies concerned.

Inspections of problem areas will be conducted with land resource management agencies such as the Bureau of Land Management.



## NONPOINT SOURCE POLLUTION

### 1. State Legislation

Section 69-4801 states in part:

- (2) *It is not necessary that wastes be treated to a purer condition than the natural condition of the receiving stream as long as the minimum treatment requirements established under this chapter are met. "Natural" refers to conditions or material present from runoff or percolation over which man has no control or from developed land where all reasonable land, soil and water conservation practices have been applied. Conditions resulting from the reasonable operation of dams at the effective date of this act are "natural."*

Section 69-4802 states in part:

- (5) *"Pollution" means contamination, or other alteration of the physical, chemical, or biological properties of any state waters, which exceeds that permitted by Montana water quality standards, including, but not limited to, standards relating to change in temperature, taste, color, turbidity, or odor; or discharge of any liquid, gaseous, solid, radioactive, or other substance into any state water which will or is likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish, or other wildlife. A discharge which is authorized under the pollution discharge permit rules of the board is not "pollution" under this chapter.*

Section 69-4806 states in part:

*It is unlawful to:*

- (1) *cause pollution as defined in section 69-4802(5), R.C.M. 1947, of any state waters or to place or cause to be placed any wastes in a location where they are likely to cause pollution of any state waters;*

## 2. Review of Past Program

The principal source of nonpoint source of pollution in Montana is sediment due to erosion. The problem of sediment has, by necessity, received little attention by the bureau in past years. Due to the widespread nature of the problem and limited funds and manpower to deal with the issue, direct input toward a sediment control program has been minimal. While past efforts to establish statewide sediment control have failed, the issue has not been totally ignored by the state. Senate Joint Resolution 52, which was adopted by the 1974 Montana Legislature, charges the Department of Natural Resources and Conservation and the Resource Conservation Advisory Council in cooperation with the Montana Association of Conservation Districts, the Department of Health and Environmental Sciences, and other interested parties to make a thorough sediment control study. Such a study would include a review of existing legislation and make recommendations to the 1975 legislative session for a statewide program to control soil erosion and sediment damage. In accordance with this directive, a special committee, consisting of eight state and federal agencies, was formed to provide a broad interdisciplinary approach to develop a situation statement on sediment in Montana. The situation statement which was prepared discussed not only the complexity of soil erosion problems through the state of Montana, but also provided a summary of existing state and federal legislation which could, in some way, be used to deal with this issue. The situation statement was then forwarded to several hundred interested parties along with a questionnaire to provide these people with an opportunity to express their feelings regarding the existing situation and any proposed control program. Several task groups were then utilized to deal with selected areas of the problem. Following meetings by these groups, the decision was made that an additional assessment of the situation must be accomplished before legislative recommendations could be made.

As an indirect outgrowth of this directive, the bureau, during fiscal year 1976, submitted a proposal to the Environmental Protection Agency for a statewide sediment control project which would hopefully provide the additional assessment previously identified. This project began in earnest during January of 1976 and is attempting to accomplish the following objectives:

- (1) Evaluate, in detail, existing regulatory authority.

- (2) Using the water quality inventory and management plans that are currently being completed for the 16 designated basins in Montana as a guide, provide supplemental information regarding sediment problems.
- (3) Develop best management practices necessary for the control of erosion problems.
- (4) Develop and initiate a sediment control program administered on a local level by the Lewis and Clark Conservation District.
- (5) Conduct a cost-effective analysis for the implementation of sediment control programs and the application of required conservation practices.

The Department of Health and Environmental Sciences, Department of Natural Resources and Conservation, and the Lewis and Clark Conservation District are working jointly on this project. The project is viewed as an opportunity to evaluate what appears to be an excellent approach to sediment control which, if successful, could have widespread application.

### 3. Five Year Strategy

In approaching nonpoint sediment water pollution problems, the Water Quality Bureau will place its emphasis on preventive measures; and as a program develops, the emphasis can then be shifted to the reduction or elimination of existing problems. Any program which is developed to deal with nonpoint sediment problems can only be successful with cooperative efforts from a number of governmental agencies and organizations with expertise in land use management and with local support. The statewide sediment control project currently underway will hopefully provide the bureau with an opportunity to adequately evaluate one possible approach to a sediment control program. The project will allow the Lewis and Clark Conservation District to implement and administer a sediment control program as provided for under Montana Conservation District Law. Under this law, the conservation district and the board of supervisors have the authority to adopt land use regulations in the interest of conserving soil and preventing or controlling erosion. Such a program would emphasize local control by capable agencies or groups in line with current federal and state philosophy. And it would possibly develop an extensive sediment control program which would require considerably less resource input by regulatory agencies than would a totally state-administered program.

Abatement of nonpoint sediment pollution problems will require expenditure of a considerable amount of resources. Such expenditure would substantially exceed the amount of state resources which have been devoted to this area in the past, but without some additional commitment, little can be done towards developing an effective program. The Section 303(e) water quality inventory and management plans which will have been completed during this period for all basins within the state have at least briefly evaluated the nature and extent of sediment problems within each basin. The preliminary investigations which have been made will require more detailed evaluation, including monitoring, to characterize the pollutants and their effect on the receiving streams. The problem areas identified in these plans should be further discussed with local representatives of groups and agencies currently involved with these problems. It is hopeful that the Section 208 planning effort will provide an effective tool by which the required objectives can be accomplished.

The Section 208 planning effort and the statewide sediment control project will be closely coordinated to insure that duplication of effort is minimized. Should the statewide sediment control project prove that an effective sediment control program can be administered by local conservation districts, the bureau, in cooperation with other agencies, would then work toward getting other conservation districts throughout the state to accept this responsibility. Should, however, the project prove somewhat unsuccessful for any reason, the necessary legislation to develop a statewide sediment control program administered from a different level of government will be sought.

The nonpoint source assessment to be completed under Section 208 planning should provide additional information as to those stream segments which are currently being substantially affected by sediment. These problems, having been identified, could be acted upon by whatever sediment control program is found to be most successful.

#### 4. Fiscal Year 1977 Strategy

The Statewide Section 208 planning effort identified elsewhere in this document will hopefully provide the bureau with an opportunity for additional indepth study of sediment and its effect on water quality. While sediment has been identified as one of the most significant pollutants in our agriculturally-oriented state,

additional information must be obtained before complete control can be accomplished. It is therefore extremely important that sediment control efforts under the Statewide Section 208 program be coordinated with those of the statewide sediment control project. The final report for either of these efforts will not be available during fiscal year 1977, but much of the information may be available for review during that time. The state's position and future sediment control programs will be developed as more and more information becomes available regarding the nature and extent of the sediment problem within the state.



## MONITORING

### 1. State Legislation

Section 69-4809.1 states in part:

(1) *The department shall:*

- (d) *Collect and furnish information relating to the prevention of water pollution;*
- (e) *Conduct or encourage necessary research and demonstrations concerning water pollution.*

### 2. Review of Past Program

During fiscal year 1976, physical and chemical stations in the primary water quality network consisted of 18 Water Quality Bureau and 20 U.S. Geological Survey sampling sites (Table 6). There were also 55 biological stations in the primary network (Table 7).

Continuous conductivity monitoring on Silver Bow Creek and continuous temperature monitoring on the Big Hole and Beaverhead Rivers were not accomplished as planned for fiscal year 1976. This was due to lack of funds for the necessary equipment and a shortage of manpower to maintain these stations.

Chain of custody procedures for field samples were finalized and used in the latter half of fiscal year 1976. All compliance monitoring and other samples which were used as evidence in court cases followed these procedures for field to lab sample handling.

External quality assurance samples, which included spiked and duplicate samples, were prepared and analyzed during fiscal year 1976. These samples were run to check sample collecting procedures, handling procedures before analysis, and analytical results. Parameters in the external control samples included metals and nutrients. Results of analyses of these external standards showed that nearly all parameters were accurately analyzed. Analytical problem areas were found and deficiencies corrected.

Development of a software transfer system to enter bureau data into the STORET system was begun in fiscal year 1976. This soon-to-be-completed transfer system will become operational during fiscal year 1977. Once operational, this transfer system will provide automated transfer of Water Quality Bureau data to the STORET system.

### 3. Five Year Strategy

The overall objective of the Water Quality Bureau's monitoring activities is to provide a continuous check on the quality of Montana's water. The five year strategy is designed to achieve this objective.

A principal emphasis in the five year program will be to monitor locations where some water quality change is anticipated due to activities such as mining, logging, agricultural practices, or where additional wastewater treatment facilities have been installed and subsequent improvement in stream quality anticipated. There will be a continuation of the compliance monitoring program of the Water Quality Bureau to insure that those industrial, municipal and other discharges possessing discharge permits from the bureau will be in compliance with their permit conditions. Further information is provided on this topic in the Permits Section of this plan.

Another important item of the five year strategy will examine the objectives of the bureau's various monitoring programs. This examination will study the rationale of various monitoring programs in order to place monitoring on a scientific basis that will yield maximum returns in useful, meaningful data for the least cost.

The bureau will also research current water quality studies conducted in Montana by other agencies (state, federal, and private). This information will be catalogued for future reference and drawn upon if data is needed for a specific area where the bureau is lacking. This catalogued information of current water quality studies could also be used by other agencies or individuals requesting such information. Such a catalog system would make available current water quality data to persons requesting it; therefore, making the most use of up-to-date facts on Montana's water quality.

Another element of the long-term strategy is to continue development of a data handling system that will provide

automated access to water quality data collected in Montana. The data system now being developed will receive data from state agencies and enter it into a data handling system and subsequently transfer it to the national STORET system. The long-term strategy will be to get data from other sources, including federal, private and university sources into a uniform data handling procedure. Once these other data sources are integrated into a single comprehensive storage system (STORET), maximum use of data collected will be achieved for water quality monitoring objectives.

Laboratory analytical capability will continue to be upgraded in the next five years with additional automated equipment and additional computer interfacing providing higher reliability and lower sample costs. A formalized system of internal and external controls will be utilized in the laboratory and more effort will be devoted to experimental techniques to increase the accuracy and precision of the tests. It is expected that a laboratory quality assurance program will be developed and utilized for private laboratories that are performing self-monitoring analyses for permits.

Additional work will be done to insure that field sampling procedures utilize the most current techniques. Techniques of sampling, preservation and storage will be examined to insure that samples provide the proper results.

Efforts will be made in the next five years to examine instrumentation for continuous in-stream monitoring of selected water quality parameters such as temperature, pH, and specific conductivity. This will allow a continuous record to be developed on certain streams and other water bodies. Similarly, other monitoring techniques such as remote sensing and automated pollution alarm systems will be examined to determine their effectiveness and costs.

#### 4. Proposed Fiscal Year 1977 Program

##### (a) Primary Monitoring Network

Biological, chemical and physical monitoring will continue at fixed stations in the primary monitoring network (Tables 6 and 7). Most of the chemical and physical stations will be monitored quarterly. The biological stations will be sampled and analyzed annually. Depending on the availability of equipment and manpower, continuous

conductivity may be monitored on Silver Bow Creek below the Warm Springs ponds, and continuous temperature measurements may be recorded on the Big Hole and Beaverhead Rivers during low-flow warm weather.

(b) Investigative Monitoring

Investigative monitoring can be defined as monitoring necessary to determine if water quality damage has occurred. This type of monitoring will be done for a variety of situations, such as, fish kills, groundwater contamination, channelization of stream beds, oil spills, other accidental spills, and any other type of newly discovered sources of water pollution. It is impossible to predict sample numbers or when these types of samples will be collected during the next fiscal year. Each year, more investigative monitoring has been necessary; thus, in fiscal year 1977, this type of monitoring will be important in the overall monitoring program.

(c) Field Chain of Custody

All compliance and investigative monitoring will use the newly developed chain-of-custody procedures for handling samples from the field to the laboratory. These procedures were designed to insure the samples are properly collected, continuous custody maintained, and properly handled until delivery to the laboratory. The use of the field chain-of-custody procedures will provide the bureau with legally sound sampling evidence when needed to prove that water quality violations have occurred.

(d) Quality Assurance

A laboratory quality assurance program will continue in fiscal year 1977. Precision and accuracy graphs have been developed. Spiked and duplicate samples are run routinely and used in conjunction with the graphs to evaluate all analytical results.

The external quality assurance program initiated in the past fiscal year will continue in fiscal year 1977. In the past program, metals and nutrients were the only parameters tested. Attempts will be made to expand this program to include other commonly analyzed parameters.

(e) Data Storage

The development of a software transfer system to enter bureau data into the STORET system will be completed and in operation by fiscal year 1977. This new transfer system will enable automated transfer of past and future Water Quality Bureau data to STORET.

TABLE 6. FIXED WATER QUALITY STATIONS IN THE  
PRIMARY MONITORING NETWORK

<u>Station</u>	<u>Location</u>	<u>Monitoring</u>	<u>Parameter</u>
<u>KOOTENAI BASIN</u>			
Kootenai River below Libby Dam (USGS)	31N 29W 33CAB	Monthly	Dissolved gases
		Bi-weekly	Nutrients
<u>FLATHEAD BASIN</u>			
Flathead River at Holt Bridge (WQB)	27N 20W 23BCA	Quarterly	Nutrients, sediments
North Fork Flat- head River at Canadian Border (USGS)	37N 22W 05AD	Monthly	Common ions, nutrients, sediments
		Quarterly	Metals
Ashley Creek above Kalispell STP (WQB)	28N 21W 20BCC	Quarterly	Coliforms, nutrients
Ashley Creek below Kalispell STP (WQB)	28N 21W 29BAB	Quarterly	Coliforms, nutrients
Whitefish River near Kalispell at USGS Station (WQB)	30N 21W 34BDC	Quarterly	Coliforms, nutrients
<u>UPPER CLARK FORK BASIN</u>			
Silver Bow Creek at lower pH shack (WQB)	05N 09W 18CAA	Continuous during first and fourth quarters	Conductivity
		Quarterly	Nutrients, metals, sediments
Clark Fork River at Deer Lodge (WQB)	07N 09W 09BAB	Quarterly	Nutrients, metals, sediments

<u>Station</u>	<u>Location</u>	<u>Monitoring</u>	<u>Parameter</u>
<u>LOWER CLARK FORK BASIN</u>			
Clark Fork River just above Six Mile Creek (WQB)	15N 22W 26ACB	Bi-monthly	Color, COD, TOC, phenols, DO, common ions, nutrients, sediments
Clark Fork River at Harper's Bridge (WQB)	14N 21W 35ADA	Bi-monthly	Color, COD, DO, TOC, phenols, common ions, nutrients, sediments
<u>UPPER MISSOURI BASIN</u>			
East Gallatin River at Thompson Creek (WQB)	01N 05E 18CBB	Quarterly	Nutrients, coliforms, sediments
Big Hole River at Twin Bridges (F&G Site - to be done in con- junction with WQB)		Continuous during first quarter	Temperature
Beaverhead River near Twin Bridges (USGS Site - WQB will coordinate effort)	05S 07W 22DBC	Continuous during first quarter	Temperature
<u>MISSOURI-SUN-SMITH BASIN</u>			
Missouri River at Toston (USGS)	05N 02E 36BD	Monthly	Nutrients
Muddy Creek near Vaughn (USGS)	22N 01E 32AB	Daily  Monthly	Sediments  Nutrients
Prickly Pear Creek above Helena STP (WQB)	10N 03W 15BAC	Quarterly	Coliforms, nutrients
Prickly Pear Creek below Helena STP (WQB)	11N 03W 34CCD	Quarterly	Coliforms, nutrients

<u>Station</u>	<u>Location</u>	<u>Monitoring</u>	<u>Parameter</u>
Prickly Pear Creek at Hwy 12 in E. Helena (WQB)	10N 02W 30C	Quarterly	Metals
Sun River near Vaughn (USGS)	21N 02E 33CDB	Monthly	Common ions, sediments, nutrients
<u>MIDDLE MISSOURI BASIN</u>			
Missouri River near Landusky. (USGS)	22N 24E 31AB	Weekly	Sediments
<u>LOWER MISSOURI BASIN</u>			
Missouri River near Culbertson (USGS)	27N 56E 03BD	Monthly	Phytoplankton, common ions, nutrients
		Quarterly	Periphyton, chlorophyll
		Weekly	Sediments
Red Water River at Circle (USG)	19N 48E 11CC	Monthly	Common ions, nutrients, sediments
		Quarterly	Metals
East Fork of Poplar River at Canadian Border (USGS)	37N 48E	Monthly	Common ions, nutrients, sediments
		Quarterly	Metals
<u>UPPER YELLOWSTONE BASIN</u>			
Yellowstone River at Laurel (USGS)	02S 24E 15CCC	Monthly	Common ions, coliforms
		Semi- monthly	Nutrients
Yellowstone River at Billings (USGS)	01N 26E 34AA	Monthly	Common ions, nutrients
Yellowstone River at USGS Station in Billings (WQB)	01N 26E 34AA	Monthly	Coliforms, phenols

<u>Station</u>	<u>Location</u>	<u>Monitoring</u>	<u>Parameter</u>
Yellowstone River at Billings at diversion dam (WQB)	02N 27E 34	Monthly	Coliforms, phenols
Yellowstone River at Huntley (USGS)	02N 27E 24C	Monthly	Sediments, coliforms
		Semi- monthly	Nutrients
Yellowstone River near Livingston (USGS)	03S 09E 12BBA	Monthly	Nutrients
<u>MIDDLE YELLOWSTONE BASIN</u>			
Big Horn River at Bighorn (USGS)	05N 34E 33AA	Monthly	Common ions, coliforms, nutrients, sediments
		Quarterly	Metals
Tongue River at Miles City (USGS)	07N 47E 23D	Monthly	Common ions, nutrients, coliforms, sediments
		Quarterly	Metals
Tongue River near Ashland (USGS)	01N 44E 34ABD	Monthly	Common ions, nutrients, sediments
		Quarterly	Metals
<u>LOWER YELLOWSTONE BASIN</u>			
Powder River at Moorhead (USGS)	09S 48E 08B	Monthly	Common ions, sediments, nutrients
		Quarterly	Metals
Powder River at Locate (USGS)	08S 51E 14CB	Monthly	Common ions, nutrients, sediments
		Quarterly	Metals

<u>Station</u>	<u>Location</u>	<u>Monitoring</u>	<u>Parameter</u>
Yellowstone River near Sidney (USGS)	22N 59E 09CAC	Monthly	Common ions, sediments, coliforms, BOD
		Semi- monthly	Nutrients

MUSSELSHELL BASIN

Musselshell River at Mosby (USGS)	14N 30E 11BB	Monthly	Common ions, nutrients, sediment, coliforms
		Quarterly	Metals
Musselshell River at Roundup (USGS Site - WQB will collect chemical data)	08N 25E 22D	Quarterly	Flow, common ions, nutrients
Musselshell River at Harlowton (USGS Site - WQB will collect chemical data)	08N 15E 28A	Quarterly	Flow, nutrients, common ions

TABLE 7. FIXED BIOLOGICAL STATIONS IN THE  
PRIMARY MONITORING NETWORK

FLATHEAD BASIN

North Fork of Flathead River at Canadian Border  
Whitefish River near Kalispell  
Stillwater River near Kalispell

UPPER CLARK FORK BASIN

Silver Bow Creek at Lower pH Shack  
Clark Fork River at Deer Lodge

LOWER CLARK FORK BASIN

Bitterroot River at Maclay Bridge  
Clark Fork River at Huson Railroad Bridge  
Clark Fork River at Harper's Bridge

UPPER MISSOURI BASIN

East Gallatin River at Thompson Creek  
Big Hole River at Twin Bridges, Montana  
Beaverhead River at Twin Bridges, Montana  
Ruby River near Twin Bridges, Montana  
Boulder River near Boulder, Montana  
Red Rock River above Lima Reservoir  
Sheep Creek above confluence with Muddy Creek  
Muddy Creek at mouth  
Grasshopper Creek near mouth  
West Fork Madison River near mouth

MISSOURI-SUN-SMITH BASIN

Muddy Creek near Vaughn, Montana  
Prickly Pear Creek above Lake Helena  
Prickly Pear Creek below East Helena  
Prickly Pear Creek below ASARCO  
Sun River above Vaughn, Montana  
Sun River below Vaughn, Montana

MIDDLE MISSOURI BASIN

Wolf Creek at Denton, Montana  
Judith River near Utica  
Judith River at mouth  
Big Spring Creek north of Lewistown  
Arrow Creek at mouth

#### LOWER MISSOURI BASIN

Red Water River at Circle  
Red Water River at mouth  
East Fork Poplar River at Canadian Border  
East Fork Poplar River at mouth

#### UPPER YELLOWSTONE BASIN

Clarks Fork of Yellowstone River at Laurel, Montana  
Yellowstone River at diversion dam  
Yellowstone River at USGS station in Billings  
Shields River near mouth  
Yellowstone River at Livingston, Montana

#### MIDDLE YELLOWSTONE BASIN

Tongue River at Miles City, Montana  
Tongue River at Ashland, Montana  
Rosebud Creek above Pony Creek near Colstrip, Montana  
Armells Creek near Colstrip, Montana

#### LOWER YELLOWSTONE BASIN

Powder River near Locate, Montana

#### MUSSELSHELL BASIN

Musselshell River at Mosby, Montana  
Musselshell River at Bundy, Montana  
Musselshell River at Delphia, Montana

#### MARIAS BASIN

Pondera Creek near mouth  
Marias River at Loma  
Teton River near Loma

#### MILK RIVER BASIN

Big Sandy Creek near mouth  
Lodge Creek near Chinook, Montana  
Milk River at Nashua, Montana

#### LITTLE MISSOURI BASIN

Little Missouri at Capitol, Montana  
Beaver Creek at Wibaux, Montana

#### ST. MARY BASIN

Swift Current Creek near Babb, Montana

## WATER QUALITY MANAGEMENT PLANNING

### 1. State Legislation

Section 69-4809.1 states in part:

(1) *The department shall:*

- (d) *Collect and furnish information relating to the prevention and control of water pollution;*
- (e) *Conduct or encourage necessary research and demonstrations concerning water pollution.*

### 2. Review of Past Program

#### (a) Basin Planning

States were required under Federal Regulation 18CFR601.32 and .33 dated July 2, 1969 to provide water quality management plans for river basins, metropolitan, and regional areas. In 1971, planning was initiated in areas where construction grants were contemplated. Without an interim basin, regional, metropolitan, or project plan, Environmental Protection Agency construction grants could not be obtained. The Water Pollution Control Act Amendments of 1972 required river basin plans as outlined by Section 303(e) of the act to be completed by July 1, 1976 (deadline extensions on a case-by-case basis could be made by EPA beyond the July 1, 1976 deadline). The basin plans outline the needs and priorities of the particular river basin as it pertains to water pollution control.

In fiscal year 1973, the Water Quality Bureau developed a continuing planning process which outlined the methodology and strategy to be used in preparing basin plans in Montana. The planning process was part of an overall state master plan for water pollution control. The Water Quality Bureau began basin-wide detailed water quality investigations in fiscal year 1973. The state was divided into 16 water quality management basins based on similarities in hydrology and water quality (Figure 1). The 303(e) water quality management plans were completed within the period of 1974-1976.

Principal efforts devoted to basin plan preparation included: field examination of the basin, meetings and coordination with key basin persons and organizations, water quality sampling to document the basin's water quality, and determination of existing and potential basin water quality problems. The effort was interdisciplinary with technical impacts from sanitary engineers, biologists, hydrologists, soils scientist, and chemists. The basin planning effort was primarily concentrated on point source pollution but included some work to identify nonpoint sources of pollution. The basic plan contents and planning methodology followed 40 CFR Part 131.

Detailed investigations were made of stream segments that were classified as water quality limited. (Water quality limited segments are those segments of streams which will not meet water quality criteria for their classified use with the application of secondary treatment for municipal wastewaters and best practicable treatment for industrial wastewaters. Effluent limited segments are those stream segments which will meet water quality standards with application of appropriate effluent limitations.) Investigations were primarily limited to those segments where point source discharges are present or where nonpoint discharges can be identified and are potentially correctable.

Regulation 40 CFR Part 131 pursuant to Section 208 of PL 92-500 outlined detailed planning requirements in areas designated by the governors of states having complex wastewater treatment problems or where substantial problems could occur due to a high rate of population-industrial development. Four areas and their corresponding district planning organizations were designated by Governor Judge in fiscal year 1975 (refer to Figure 2, page 68. These districts receive 100% federal funding from EPA for water quality management planning in their district. These plans include assessments of local water quality, land use-water quality interrelationships, alternatives for correction of water quality problems and development of an implementable plan for the prevention, abatement and control of water quality degradation. Public participation and coordination with agencies and the public are major outputs of the planning process.

Designated areawide planning organization districts, funding allocations and plan completion dates are shown below:

Areawide Planning Organization (APO)	Funding	Completion Date
Flathead Drainage APO	\$495,000	Dec. 1, 1977

Yellowstone- Tongue APO	\$540,000	Nov. 15, 1977
Middle-Yellowstone APO	\$735,000	Dec. 1, 1977
Blue Ribbons of Big Sky Country APO	\$475,000	Feb. 1, 1978

In cooperatiior with the Department of Community Affairs the Water Quality Bureau has worked with three additional areas that have the potential for designation if additional federal funds become available for Section 208 planning. These areas are also shown on Figure 2.

It was apparently EPA's intent that the detailed planning in the non-designated areas under Section 208 would amount to a minor upgrading of the Section 303(e) water pollution control management plans. A federal court decision rendered during 1975 directed EPA to issue regulations which would require states to undertake detailed planning for areas outside of designated areas. The revised regulations (40 CFR, Parts 130 and 131) issued on November 28, 1975 establish a new procedure for the state continuing planning process and preparation of water quality management plans (both in designated areas and in the remainder of the state). The revisions to these regulations reflect the increasing emphasis on management of nonpoint sources and serve to clarify the state planning responsibilities under Section 208, as well as Section 303 of the act. To date, the Water Quality Bureau has written a new Continuous Planning Process (April 9, 1976) and a grant application for Statewide Section 208 Water Quality Management Planning (April 20, 1976) which outline the methodology for completing statewide planning for Section 208 of PL 92-500.

#### Five Year Strategy

The Water Quality Bureau will work towards meeting the November 1, 1978 completion date regulation for the statewide plans established by EPA. The plans will consist of the following elements:

- (1) Planning boundaries
- (2) Water quality assessment and segment classification
- (3) Inventories and projections
- (4) Nonpoint source assessment

- (5) Water quality standards
- (6) Total maximum daily loads
- (7) Point source load allocations
- (8) Municipal waste treatment system needs
- (9) Industrial waste treatment system needs
- (10) Nonpoint source control needs
- (11) Residual waste control needs; land disposal needs
- (12) Urban and industrial stormwater needs
- (13) Target abatement dates
- (14) Regulatory programs
- (15) Management agencies
- (16) Environmental, social, economic impact

The Water Quality Bureau will work closely with the policy advisory committee established for the specific purpose of providing guidance to the Water Quality Bureau on the planning effort. Public participation into the planning effort will be sought from federal, state, and local governments and the public. Close coordination will be sought with others involved with planning which may affect water quality. Changes in laws and regulations needed to provide an effective economically feasible water pollution program will be requested. It is the intent that the statewide, as well as areawide plans, will be implemented following the planning period.

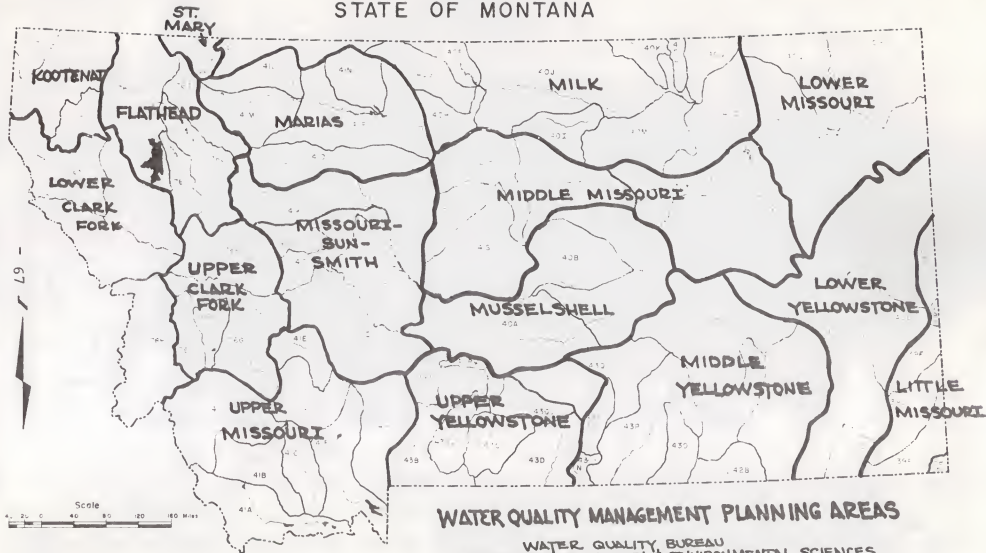
### 3. Proposed Fiscal Year 1977 Program Plan

Major emphasis will be placed on inventories and assessments of water quality problems, elements relating to water pollution and potential problems due to proposed energy resource and related developments. Contract proposals will be requested, reviewed and initiated for tasks where work is to be done outside of the Water Quality Bureau.

Coordination with other agencies and the policy advisory committee utilizing their input will be a major function of the Water Quality Bureau. An active public participation program will be initiated. Further detail of the program can be found in the April 20, 1976 Statewide Section 208 Water Quality Management Plan and the final work plan which should be developed in July and August, 1976.

FIGURE 1

STATE OF MONTANA

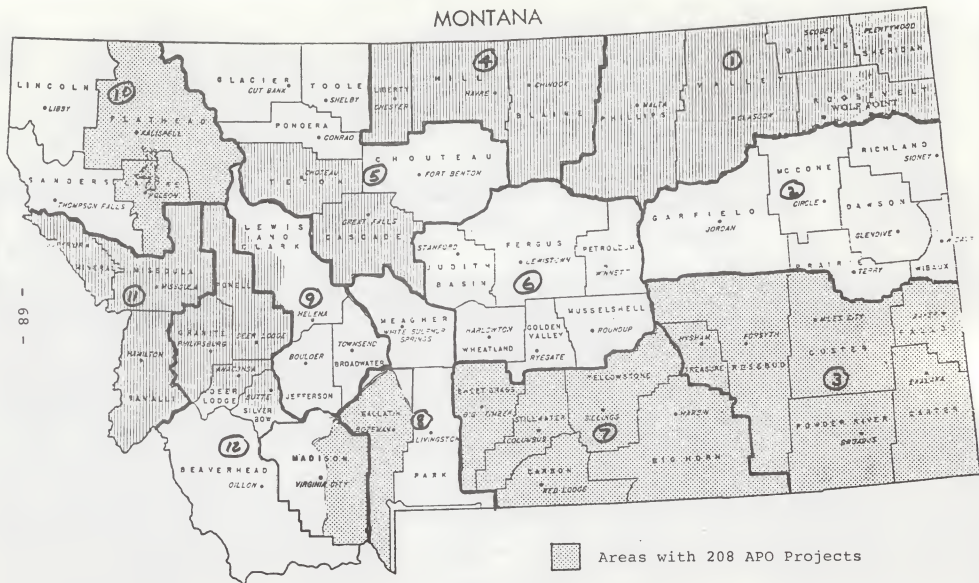


WATER QUALITY MANAGEMENT PLANNING AREAS

WATER QUALITY BUREAU  
MONTANA DEPT. OF HEALTH & ENVIRONMENTAL SCIENCES

Figure 2  
208 Status Map - March 1976

# MONTANA



Areas with 208 APO Projects

Potential 208 APO Projects

State 208 Project

No. 1042 County Outline Map  
STATE PUBLISHING COMPANY  
Helena

Multi-County District  
Boundaries

## TECHNICAL STUDIES AND SUPPORT

### 1. State Legislation

Section 69-4809.1(1)(d) and (e) under Duties of Department states:

(1) *The department shall:*

- (d) *Collect and furnish information relating to the prevention and control of water pollution;*
- (e) *Conduct or encourage necessary research and demonstration concerning water pollution;*

### 2. Past Program

The bureau's technical studies and support capabilities have largely been funded through special grants or contractual agreements with other agencies. Prior to 1973, few studies were performed. A summary of the principal studies involved follows:

- (a) "A Study of the Water Quality of Twelve Lakes in the Flathead River Drainage Basin" subcontracted to Lawrence C. Sonstelie of Flathead Valley Community College through a grant made by EPA to the Department of Health and Environmental Sciences. This study was designed to determine the nutrient status of 12 representative lakes in the Kalispell area and the nutrient inputs they can tolerate without damage. The 12 lakes studied were Ashley, Blaine, Blanchard, Echo, Five, Foy, Little Bitterroot, Lower Stillwater, Mary Ronan, Rogers, Swan, and Whitefish. This study was completed in 1975.
- (b) "Distribution and Biotic Effects of Nutrients in Flathead Lake, Montana" subcontracted to the University of Montana Biological Station through a grant made by EPA to the Department of Health and Environmental Sciences. Study was undertaken to describe seasonal dynamics of various physical and chemical parameters involved in plankton community metabolism, to relate findings to nutrient loading

trends previously reported, and to determine if nutrient removal was required by upstream communities at this time to prevent eutrophication of Flathead Lake. Study completed in 1975.

- (c) "Gallatin Basin Waste Allocation Study", subcontracted to Montana State University, Department of Microbiology. This grant was made by EPA to the Department of Health and Environmental Sciences to primarily determine the degree of treatment needed by the city of Bozeman to meet water quality standards. Study completed in 1975.
- (d) Saline Seep Contract with Department of State Lands to investigate the impact of saline seeps on surface waters, public water supplies and groundwater. This investigation began in fiscal year 1975 and is being continued with funding from the Old West Commission. The State Bureau of Mines and Geology is also involved with this study. It is currently in progress and should be completed during fiscal year 1977.
- (e) Coal Developments - Investigation of the impact of energy development on water quality in the Yellowstone River. This project is funded by the Old West Regional Commission and is currently in progress and should be completed in fiscal year 1977.
- (f) Yellowstone River, Billings - This investigation examines waste loading in the Yellowstone River from Laurel to Huntley. The project began at the end of fiscal year 1975. The objective is to determine stream conditions and allocate waste loads in the stream segment, and it should be completed by October 1, 1976.
- (g) Logan Creek Watershed - This cooperative investigation was initiated in fiscal year 1975 and is funded by the U. S. Forest Service. The objective is to determine the impact of logging and road building on water quality in the Logan Creek watershed and is currently in progress.
- (h) Tongue River - This program was initiated in the latter part of fiscal year 1975 and is funded by EPA. The objective is to determine the effects of coal developments on water quality in the Tongue River and Tongue River Reservoir. Project completed in fiscal year 1976.
- (i) East Poplar River - This program, beginning in late fiscal year 1975, is funded by EPA. The objective was to predict the effects of a Canadian coal development on the East Poplar River. Project completed in fiscal year 1976.

- (j) Colstrip - Funded partially by the Department of Natural Resources and Conservation to predict effects of Colstrip Nos. 3 and 4 on water quality and to determine if water quality standards would be met by its operation. Investigation began in 1974 and completed in 1975.
- (k) Statewide Sediment Control Project - This is a cooperative project between the bureau, Soil Conservation Districts of the Department of Natural Resources and Conservation and the Lewis and Clark County Soil Conservation District. Project is funded through a grant from EPA and was started in 1975 with completion scheduled for fiscal year 1978. Further detail of this project is given in the Nonpoint Source Section of this program plan.
- (l) Hughesville - This is an acid mine drainage study in which the bureau first determined the principal sources and chemical constituents of acid mine drainage and their effects on the Dry Fork of Belt Creek and principal tributaries. The second phase of the project is an investigation of changes on acid mine drainage, volume and chemical constituents due to physical changes made at the project site. Project is funded by EPA by grant to the Department of Natural Resources and Conservation. The bureau is subcontracting the water quality investigations through contract with Department of Natural Resources and Conservation. This phase of the project is expected to be completed during fiscal year 1978.
- (m) Hebgen Lake - This project is funded by the U. S. Forest Service and conducted by the bureau to obtain baseline data which will provide the basis for predicting impacts of developments on Hebgen Lake. The study on Hebgen Lake is expected to be completed by October 1, 1976.
- (n) Irrigation Effects on Water Quality - In this project the bureau water quality laboratory personnel are analyzing water samples from irrigation projects which are being sampled by Bureau of Reclamation personnel. The analytical work performed by the bureau is being funded by the Bureau of Reclamation. The project was started in fiscal year 1975 and is expected to be completed in fiscal year 1977.
- (o) Groundwater Studies - These are further covered under the Groundwater Section.

Support for these studies was provided by bureau personnel working in the chemical laboratory and by personnel in the bacteriological laboratory.

### 3. Five Year Strategy

Technical studies for which contracts have already been signed and are not yet completed by the end of fiscal year 1976 are expected to continue unto completion. Additional contracts beyond fiscal year 1976 are expected on the U. S. Forest Service projects mentioned above or similar projects. The department is seeking a contract with EPA to do further work in the Colstrip area to determine the effects on water quality due to Colstrip Nos. 1 and 2. Some work will be done on this project even if EPA funds are not available, but a much greater amount of effort will be provided if a grant can be obtained. Approval to use any grant monies must first be obtained from the Governor's Office of Budget and Program Planning or the State Legislature.

Appendix C lists areas by priority where further study is needed outside of 208 designated areawide districts. The 208 areawide planning organizations are expected to do the principal technical studies in their areas. Statewide 208 grant funding is expected to be utilized for a portion of the higher priority studies needed outside of the designated areas during fiscal years 1977 and 1978.

If substantial development occurs as predicted in the energy related field and mining, the need for technical studies will greatly increase and so will the need for additional personnel doing these studies. These are the unknowns facing the bureau and other agencies. The actual studies needed cannot be accurately predicted at this time.

### 4. Proposed Fiscal Year 1977 Program Plan

If approval of the Governor's Office of Budget and Planning is obtained, the following studies will be continued in fiscal year 1977:

- (a) Saline Seep
- (b) Old West Commission Coal Developments
- (c) Logan Creek Watershed
- (d) Statewide Sediment Control Project
- (e) Hughesville

Under the same condition, new or more extensive studies are proposed at:

- (a) Colstrip
- (b) Hebgen Lake or similar work on other lakes or streams
- (c) High priority areas for correction of water pollution control problems to be determined during preparation of final work plan of the statewide 208 program.



## GROUNDWATER

### 1. State Legislation

#### Section 69-4802 (9) states:

- (9) *"State waters" means any body of water, irrigation system, or drainage water either surface or underground; however, this subsection does not apply to irrigation waters where the waters are used up within the irrigation system and the waters are not returned to any state waters.*

#### Section 69-4804 states:

*This chapter applies to drainage or seepage from all sources including that from artificial, privately owned ponds or lagoons if such drainage or seepage may reach other state waters in a condition which may pollute the other state waters.*

#### Section 69-4904 (4) and (5) state:

*The department of health and environmental sciences shall:*

- (4) *Advise persons as to the best method of purifying and disposing of their drainage, sewage, or waste water with reference to the existing and future needs of other persons and to prevent pollution;*
- (5) *Consult with persons engaged in or intending to engage in manufacturing or other business whose drainage, or sewage may tend to pollute waters as to the best method of preventing pollution.*

#### Section 69-4905 (1) states:

*A person shall not:*

- (1) *Discharge polluting matter of any kind that will pollute the quality of state waters used by a person for domestic use or as a source of supply by a city, town, public institution, water or ice company.*

## 2. Review of Past Program

The bureau investigates potential and existing groundwater pollution problems. In recent years, detailed groundwater investigations were made for:

- (a) Oil near Farmers Union Central Exchange Refinery in Laurel.
- (b) Gasoline in well water in a housing development adjacent to Bozeman.
- (c) Iron in well water for a proposed subdivision near Butte.
- (d) Nitrate in well water in the Helena Valley, Colorado Gulch near Helena, and in Lincoln (cooperative studies with the U. S. Geological Survey).
- (e) Quality of water in wells near a kraft paper mill near Missoula.
- (f) Changes in salinity of municipal wells in areas prone to saline seep.
- (g) Effect on groundwater from the Great Western Sugar Company operation at Billings.
- (h) Effect on groundwater from wastewater ponds at Colstrip.

Groundwater regulations were requested from all states and were received from most. Through an EPA grant received in fiscal year 1976, groundwater regulations are being drafted.

## 3. Five Year Strategy

The bureau will continue to investigate potential and existing groundwater pollution problems. Regulations will be developed and implemented. These regulations will meet the requirements and intent of the state water pollution control and domestic water supply acts and Federal "Safe Drinking Water Act."

## 4. Proposed Fiscal Year 1977

The scheduling for development of groundwater regulations is provided in the Water Quality Standards Section of this plan.

Water quality investigations will continue in the saline seep areas, near the Hoerner-Waldorf pulp and paper mill, and at Colstrip. Where new developments may affect groundwater quality, monitoring wells will be recommended. Complaints of groundwater pollution will be investigated as time and resources permit.



## PUBLIC PARTICIPATION

### 1. State Legislation

Section 69-4809.1 states in part:

*that the department shall collect and furnish information relating to the prevention and control of water pollution.*

### 2. Past Program

Prior to February, 1976, the bureau lacked a full-time public affairs position. In fiscal year 1976, the bureau spent approximately one quarter of a man-year in public participation activities such as hearings, public meetings, talks, etc. These activities were conducted by various staff members of the Water Quality Bureau. A public meeting was held in Helena for the bureau's Continuing Planning Process and grant application for Statewide Section 208 water quality management planning. Public meetings were held in Missoula, Butte, Great Falls, Wolf Point, and Havre to initiate local interest in pursuing designation of three additional local 208 planning areas subsequent to possible release of impounded federal funds. Public hearings were also held on draft 303(e) basin plans prepared by the Water Quality Bureau in a key community of the area addressed in the individual plans. The Water Pollution Control Advisory Council established by law continued to provide recommendations to the Water Quality Bureau on its program. In February, 1976, an Information/Education Specialist was hired to fulfill two purposes: one, to initiate public participation and incorporate public desires into the bureau's planning decisions and activities; and second, to provide the public information on general program activities, as well as water pollution control education.

### 3. Five Year Strategy

A major effort will be made to encourage both public involvement in overall water quality management planning and cooperative participation by federal, state, and local governments. Local citizen groups and special interest groups will be an important focal point. Information on

proposed laws and regulations and proposed changes which could affect citizen groups and agencies will be publicized and meetings held to seek citizen review and comment. Special attention will be given to informing the public and appropriate governmental agencies of progress made throughout the statewide 208 planning process, the local 208 planning processes and the statewide sediment control project to insure consistent planning and maximize public input into development of best management practices, related nonpoint source controls, and other water quality management needs.

A basic education program to make the public more aware of federal and state water pollution control programs, concepts and philosophy of water pollution and its control will be attempted to be incorporated into existing workshops, training courses, seminars, organizational meetings, etc., conducted by government agencies, associations, and local groups. Individual "unit programs" would be developed on citizen involvement in water quality management planning, forestry and water quality, irrigation and water quality, farming and water quality, grazing and water quality, rural development and water quality, etc., using visual aids, current studies and regulations to develop information-education programs.

Radio, TV, newspapers, magazines, newsletters and public notices will be utilized to inform the public and encourage public participation in planning decisions and general agency positions, policies and programs.

#### 4. Proposed Fiscal Year 1977 Strategy

For fiscal year 1977, there exists three major goals: develop a successful public participation program for the statewide 208 water quality management planning process; develop a series of instructional units to satisfy the more urgent information-education needs of the Water Quality Bureau; and develop a working public speaking agenda and group list. It is anticipated that once needed educational materials are developed that public meetings, speaking engagements and information releases will be conducted on a weekly basis. The Water Quality Bureau along with the Region VIII EPA, Yellowstone-Tongue APO and Flathead APO have each contributed \$5,000 to develop a 16 mm film on water quality in Montana. The film project was initiated by the Flathead Drainage APO and will be a joint effort in development. Projected completion date is November 15, 1976. The film, when completed, will be used as an information-education tool at public meetings, talks and schools throughout fiscal year 1977.

## BUDGET AND MANPOWER RESOURCES

The manpower and budget summary for fiscal year 1977 presented in Table 8 consists of personnel services, contractual services, supplies and materials, communications, travel, rent, utilities, equipment, repairs, and indirect costs which are associated with federal grants. The bureau maintains three offices - the main office in Helena and branch offices in Kalispell and Billings. The Kalispell and Billings offices are shared with other division personnel. Two persons are located at Kalispell and five at Billings for water quality work. Field laboratories are also maintained at Kalispell and Billings, mainly for analytical work for samples which must be done in a short-time period and cannot be shipped to the main laboratory at Helena. About five man-years/year are associated with the laboratory work on water pollution control.

The bureau is also responsible for a regulatory program for public water supplies and swimming pools. The manpower and costs of these programs are not shown as part of this budget. A separate subdivision bureau was established during fiscal year 1976. Subdivision work was formerly performed by the Water Quality Bureau. Even though the greater portion of their work relates to water pollution control, their manpower and budget spent in this activity is not shown here. In former years, it was presented as part of the water pollution control budget. Staff personnel formerly working on subdivisions (3.5 man-years), plus one additional engineer were transferred to the Subdivision Bureau in this move.

The Water and Wastewater Operators' Certification program involves both operators in the water supply and water pollution control fields. Therefore, half of this budget is shown in the water pollution control portion.

The budget also shows funds which the bureau obtains from the 208 designated areas. These funds are utilized for engineering services performed by contract with engineers to work with the planning districts on specific outputs and coordinate the state and areawide programs.

Budgeting has become more complex with the changing of the federal fiscal year to October 1 through September 30,

while the state budget period remains as July 1 to June 30. The federal budget period is presented in Table 8 (however, the two budgets for the two (fiscal year) time periods will be fairly similar).

The income for the state's water pollution control program is estimated as follows:

State general fund:	\$250,000
Operator certification fees:	6,500
EPA program grant:	295,000
Contracts with designated areas:	80,000
Contracts for specific tasks with other agencies:	60,000
EPA Section 208 Statewide planning grant:	<u>250,500</u>
	\$942,000

TABLE 8. SUMMARY OF STATE POLLUTION CONTROL MANPOWER  
AND BUDGET FOR FEDERAL FISCAL YEAR 1977

	<u>Man-years</u>	<u>Budget</u>
Municipal Facilities (construction grants)	4.5	\$90,000
Permits (includes MPDES permits and dredged and fill authorizations)	5.0	95,000
Compliance Assurance and Municipal Operation and Maintenance	4.1	75,000
Enforcement	2.7	52,000
Planning (includes 208 areawide planning, 303(e) planning and water quality standards revisions)	0.3	86,000
Nonpoint Source Management	- <u>1</u>	- <u>3</u>
Monitoring	1.5	27,000
Manpower Development and Training	1.6	32,500
Public Participation	0.2 <sup><u>2</u></sup>	5,000
Administration	0.6	49,000 <sup><u>4</u></sup>
Other -		
1. Technical studies performed through regular budget	1.4	28,000
2. Technical studies performed through contracts with other agencies	4.0	60,000 <sup><u>5</u></sup>
3. Statewide 208 Planning	<u>10.8</u>	<u>342,500<sup><u>5</u></sup></u>
TOTALS	36.7	\$942,000

<sup>1</sup> The major part of nonpoint source work will be performed through the 208 program.

<sup>2</sup> About 1 man-year of effort will be devoted through 208 208 program.

<sup>3</sup> Includes \$80,000 for contractual agreements with engineers to work with 208 designated areas.

<sup>4</sup> Includes \$26,000 indirect charges for which no manpower is shown as services are provided by others.

<sup>5</sup> Includes an estimated \$150,000 for contractual services.



## APPENDIX



# APPENDIX A

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES PROPOSED REVISED PRIORITY SYSTEM FOR EPA CONSTRUCTION GRANTS

- I. The following priority evaluation system is established by the State Department of Health and Environmental Sciences for the allocation of federal grants to municipalities for sewage treatment works construction. This system is based on:

1. Severity of population problem
2. Population affected
3. Need for preservation of pure waters
4. National priorities

The state's construction needs list and ranking of projects will be submitted to EPA by June 30 of each year. From this list, the highest priority projects for which there is money available will receive a notice of project priority. Before receiving an actual priority certification, scheduling for the project must meet department approval.

- II. Projects shall be rated as follows:

1. Stream segment designation\*

- a. (i) Water quality limited due to municipal wastewater discharge or a combination of municipal and industrial wastewater discharges. 8
- (ii) Water quality limited due to a combination of municipal, industrial and nonpoint discharges which create or have the potential of creating a lake eutrophication problem.
- b. Effluent limited. 6
- c. Water quality limited due to nonpoint discharges in combination with municipal and/or industrial discharges not covered by a. (ii) above. 4
- d. Water quality limited due to nonpoint sources or abandoned acid mine discharges. 2

2. Water-use classification of stream receiving discharge:

- a. B-D<sub>1</sub> or higher 6
- b. B-D<sub>2</sub> or C-D<sub>1</sub> 4
- c. B-D<sub>3</sub> or lower 2

3. Population served by project:

- a. 10,000 or greater 3
- b. 1,000 to 10,000 2
- c. Less than 1,000 1

4. Scope of the project in abating pollution:

- a. Projects previously issued abatement orders by the Department's executive officer 40
- b. Construction to achieve compliance with requirements of the Montana Pollutant Discharge Elimination System permit program including, where applicable, interceptor sewers, outfall sewers, pumping stations and associated appurtenances related to the project. Priority points will be awarded in one of the following categories.
  - 1. i) Improved treatment or new treatment to replace existing facilities that are hydraulically and/or organically overloaded such that, to the potential detriment of the receiving stream, inadequate treatment is accomplished or potential health hazards or nuisances result;
  - ii) new treatment facilities to serve existing untreated discharges, where treatment facilities are cost-effective solution to the problem;
  - iii) Cost-effective infiltration/inflow reduction 30
- 2. Improved treatment or new treatment to replace existing facilities that are not capable of meeting effluent limitations on a year-round basis, but achieve a level of treatment consistent with the requirements of the receiving stream. Included in this category are conventional lagoon systems whose discharge normally causes no violation of receiving stream water quality standards or any health and nuisance problems. 25
- 3. Elimination of raw sewage bypasses as required by the MPDES permit system 25
- c. Elimination of individual disposal systems that presently create localized public health problems or hazards. Eligible costs would include the treatment works, with collection system cost eligibility to be determined by the latest federal policy. Points will be awarded in the following categories:
  - 1. Soil and/or groundwater conditions result in adequately documented widespread and year-round hazards, such as surfacing sewage, well contamination and inadequate disposal of wastewater 30
  - 2. Localized and/or seasonal problems resulting from inadequate individual disposal systems 15
- d. New or expanded sewerage systems to relieve existing systems or increase existing service area, with eligibility to be determined by the latest federal policy. 15

e. Separation of storm and sanitary sewers to prevent bypassing 10

5. Phase construction:

a. Grant previously awarded on prior phase of project and new grant needed for next phase to keep project on schedule. 30

III. Where more than one project has the same number of priority points, further rating of the projects will be based on population equivalent served by the project.

IV. Projects which are certified by the state for federal grant participation but do not receive a grant agreement prior to the end of the fiscal year will receive an additional 50 points. Such points will be applied to their total point value for the following fiscal year.

V. *Projects which have fulfilled the requirements of a "Step 1" grant and have an approved facility plan will receive an additional 10 points at the time of a scheduled priority review. Priority reviews will be held at least annually with more frequent reviews contingent upon the availability of unobligated funds.*

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\*Water quality limited means that to protect the streams with this designation, treatment greater than the general minimum treatment levels established for wastewater are needed to meet stream water quality criteria.

Effluent limited means that the general minimum treatment levels established for wastewaters are ample to meet stream water quality criteria.

The general minimum treatment level for domestic sewage is secondary treatment. For new sources of wastewater, the state's anti-degradation statement is applicable.



## APPENDIX B

## PROPOSED FY77 PRIORITY LIST

COMMUNITY	STREAM SEGMENT	WATER USE	POPULATION	SCOPE	FACILITY PLAN APPROVAL	TOTAL
Butte-Silver Bow Co.	8	2	3	40	10	63
Victor	6	6	1	40	10	63
Poplar	6	2	2	40	10	60
Billings 6th Ave. N.	4	2	3	40	10	59
Eureka	6	6	2	30	10	54
Three Forks	6	6	2	30	10	54
Stevensville	6	6	1	30	10	53
Hardin	6	4	2	30	10	52
Miles City	6	2	2	40		50
Thompson Falls	6	6	2	25	10	49
Havre East	4	2	1	40		47
Whitefish	8	6	2	30		46
Columbia Falls	8	6	2	30		46
Polson	8	6	2	30		46
Gallatin Co. RID 305	8	6	2	30		46
Bozeman	8	4	3	30		45
Anaconda	6	6	3	30		45
Bigfork	8	6	1	30		45
Livingston	6	6	2	30		44
Dillon	6	6	2	30		44
Libby	6	6	2	30		44
Hamilton	6	6	2	30		44
Red Lodge	6	6	2	30		44
Big Timber	6	6	2	30		44
Choteau	6	6	2	30		44
Townsend	6	6	2	30		44
Ronan	6	6	2	30		44
Boulder	6	6	2	30		44
Whitehall	6	6	2	30		44
Kalispell	8	2	3	30		43
Manhattan	6	6	1	30		43
Sheridan	6	6	1	30		43
Sunburst	6	6	1	30		43
Absarokee	6	6	1	30		43
Darby	6	6	1	30		43
Ennis	6	6	1	30		43
Drummond	6	6	1	30		43
East Glacier	6	6	1	30		43
Roberts	6	6	1	30		43
Hobson	6	6	1	30		43
Basin	6	6	1	30		42
Lewistown	6	4	2	30		42
Laurel	6	4	2	30		42
Harlowton	6	4	1	30		41
Browning	6	4	1	30		41
Chester	6	4	1	30		41
St. Ignatius	6	4	1	30		41
Hot Springs	6	4	1	30		41
Rocker	8	2	1	30		41

COMMUNITY	STREAM SEGMENT	WATER USE	POPULATION	SCOPE	FACILITY PLAN APPROVAL	TOTAL
Deer Lodge	4	4	2	30		40
Wolf Point	6	2	2	30		40
Baker	6	2	2	30		40
Forsyth	6	2	2	30		40
Chinook	6	2	2	30		40
East Helena	6	2	2	30		40
Cut Bank	6	6	2	25		39
White Sulphur Springs	6	6	2	25		39
Big Sandy	6	2	1	30		39
Broadus	6	2	1	30		39
Gildford	6	2	1	30		39
Malta	4	2	2	30		38
Warm Springs	4	2	2	30		38
Lodge Grass	6	6	1	25		38
Sweetgrass	6	6	1	25		38
Bridger	2	4	1	30		37
Great Falls	4	4	3	25		36
Valier	6	4	1	25		36
Winnett	6	4	1	25		36
Judith Gap	6	4	1	25		36
Sidney	6	2	2	25		35
Harlem	6	2	2	25		35
West Glendive	6	2	2	25		35
Circle	6	2	1	25		34
Terry	6	2	1	25		34
Ekalaka	6	2	1	25		34
Stanford	6	2	1	25		34
Denton	6	2	1	25		34
Hysham	6	2	1	25		34
Saco	6	2	1	25		34
Dodson	6	2	1	25		34
Rocky Boy	6	2	1	25		34
Bridger	2	4	1	25		32
Fairfield	2	4	1	25		32
Fromberg	2	4	1	25		32
Missoula Sewers	8	6	2	15		31
Whitefish Sewers	8	6	2	15		31
Kalispell Evergreen	8	6	2	15		31
Lakeside	8	6	1	15		30
Willow Creek	8	6	1	15		30
Amsterdam-Churchill	8	6	1	15		30
Bozeman Sewers	8	4	2	15		29
Dillon Sewers	6	6	2	15		29
Plains	6	6	2	15		29
Troy	6	6	2	15		29
Livingston Sewers	6	6	1	15		28
Lolo	6	6	1	15		28
Corvallis	6	6	1	15		28
Ulm	6	6	1	15		28
Swan Lake	6	6	1	15		28
Clyde Park	6	6	1	15		28
Melrose	6	6	1	15		28
Harrison	6	6	1	15		28

COMMUNITY	STREAM SEGMENT	WATER USE	POPULATION	SCOPE	FACILITY PLAN APPROVAL	TOTAL
Fort Shaw	6	6	1	15		28
Martinsdale	6	6	1	15		28
Arlee	6	6	1	15		28
Bearcreek	6	6	1	15		28
Great Falls Sewers	4	4	3	15		26
Butte Sewers	8	2	1	15		26
Lewistown Sewers	6	4	1	15		26
Conrad	6	4	1	15		26
St. Ignatius Sewers	6	4	1	15		26
Loma	6	4	1	15		26
Uelena Sewers	6	2	2	15		25
Helena Valley	6	2	2	15		25
Ashland	6	2	2	15		25
Lincoln	2	6	2	15		24
Billings Sewers	4	2	3	15		24
Miles City Sewers	6	2	1	15		24
Sidney Sewers	6	2	1	15		24
Roundup Sewers	6	2	1	15		24
Stockett	2	6	1	15		24
Simms	2	6	1	15		24
Rosebud	6	2	1	15		24
Kremlin	6	2	1	15		24
Outlook	6	2	1	15		24
Geyser	6	2	1	15		24
Whitewater	6	2	1	15		24
Carter	6	2	1	15		24
Square Butte	6	2	1	15		24
Havre Sewers	4	2	2	15		23
Kalispell Storm Sewer	8	2	3	10		23
Billings Heights	4	2	2	15		23
Huntley	4	2	1	15		22
Great Falls Storm Sewer	4	4	3	10		21
Chinook Storm Sewer	6	2	2	10		20
Power-Teton Co. Wtr Asso.	2	2	1	15		20



## APPENDIX C

## WATER QUALITY LIMITED SEGMENTS ARRANGED BY PRIORITY FOR CORRECTION

(Does not include designated areas)

## UPPER MISSOURI BASIN

<u>Stream Segment</u>	<u>Miles Affected (Estimated)</u>	<u>Point or Non-Point Source (P or NP)</u>	<u>Grid Coordinates</u>		<u>Problem</u>	<u>Priority for Correction*</u>	<u>Map Number**</u>
			<u>Beginning</u>	<u>Ending</u>			
Cataract Creek from Uncle Sam Gulch to Boulder River	6	NP	7N5W33	6N5W16	Toxic metals from past mining activity	9	1
Long Creek	10	NP	12S4W	14S4W	Sediment caused by poor land use practices	9	2
High Ore Creek from Comet Mine to Boulder River	6	NP	7N5W36	6N5W22	Toxic metals from past mining activity	8	3
Grasshopper Creek below Bannack	15	NP	8S11W	3S10W	Sediment due to past mining activities	8	4
Boulder River from Basin to Boulder	7	NP	6N5W18	6N4W32	Toxic metals from past mining activity	7	5
Red Rock River	60	NP	14S2W1	10N10W	Sediment caused by poor land use practices	6	6
Ruby River	100	NP	10S3W	4S6W4	Sediment caused by poor land use practices	6	7
Muddy Creek and Big Sheep Creek	19	NP	13S8W	13S8W	Sediment caused by poor land use practices	6	8
Beaverhead River from Dillon down- stream	25	NP	6S8W7	3S6W15	Elevated temperatures and de- watering caused by agricultural activity	5	9
Jefferson River to Three Forks	76	NP	3S6W15	2N2E30	Elevated temperatures and dewatering caused by agricultural activity	4	10

<u>Stream Segment</u>	<u>Miles Affected (Estimated)</u>	<u>Point or Non-Point Source (P or NP)</u>	<u>Grid Coordinates</u>		<u>Problem</u>	<u>Priority for Correction*</u>	<u>Map Number**</u>
			<u>Beginning</u>	<u>Ending</u>			
Big Hole River from Melrose to Jefferson River	27	NP	2S9W26	3S6W15	Elevated temperatures and de- watering caused by agricultural activity	3	11

\* Rank 1 = most important; rank 1 has highest point total

\*\* Refer to Segment Classification Figure 3, page 44

## MISSOURI SUN SMITH BASIN

Stream Segment	Miles Affected (Estimated)	Point or Non-Point Source (P or NP)	Grid Coordinates		Problem	Priority for Correction*	Map Number**
			Beginning	Ending			
Hay Creek	3	NP	6N5E	6N6E	Sediment from poor land use practices	10	12
Faulkner Creek	5	NP	6N5E	6N6E	Sediment from poor land use practices	10	13
Sheep Creek	15	NP	12N7E	12N4E	Dewatering caused by agricultural diversion	10	14
Confederate Creek	6	NP	9N2E	9N2E	Physical loss of stream channel and sediment caused by mining activity	10	15
Sand Coulee Creek	10	NP	18N5E	20N3E	Metals and acid from past mining activities	9	16
Battle Creek	15	NP	7N6E	6N6E	Sediment from poor land use practices	9	17
Newland Creek	15	NP	11N7E	10N5E	Sediment from poor land use practices and hydraulic overloading caused by agricultural water diversion	9	18
Middle Fork Sixteenmile Creek	3	NP	4N5E	4N5E	Sediment caused by poor land use practices	9	19
Deep Creek	6	NP	6N2E	6N2E	Dewatering by agricultural practices	9	20
Warm Springs Creek	9	NP	4N1E	5N2E	Nutrients and sediments caused by agricultural practices	9	21
Spring Branch Creek	3	NP	5N1E	5N2E	Sediments and nutrients caused by agricultural practices	9	22

Stream Segment	Miles Affected (Estimated)	Point or Non-Point Source (P or NP)	Grid Coordinates		Problem	Priority for Correction*	Map Number**
			Beginning	Ending			
Spring Creek and an undetermined distance downstream on Prickly Pear Creek	6	NP	7N4W11		Metals due to past mining activities	8	23
Little Prickly Pear Creek above Lyons Creek	3	NP	13N4W	13N4W	Dewatering by agricultural practices	8	24
Prickly Pear Creek below East Helena	10	NP	10N3W	11N3W	Dewatering by agricultural practices	8	25
Crow Creek	10	NP	5S1E	5S2E	Dewatering and nutrients from agricultural practices	8	26
South Fork of the Smith River	20	NP	7N8E	9N6E	Sediments and temperature caused by poor land use practices	8	27
Dry Fork of Belt Creek and Belt Creek below the Dry Fork	25	NP	15N8E	18N6E	Metals and acid from past mining activities	7	28
Dearborn River below Flat Creek and Flat Creek	15	NP	18N4W	16N2W	Sediment caused by poor land use practices	7	29
Smith River below Hound Creek	30	NP	20N3E	24N8E	Natural sediments aggravated by poor land use practices	6	30
Tenmile Creek	15	NP	10N4W	11N3W	Dewatering by agricultural practices and municipal water withdrawals	6	31
Muddy Creek and the Sun 70 River below Muddy Creek and the Missouri River from the Sun River to Fort Benton		NP	22N1W	24N8E	Sediments due to poor land use practices	3	32

\*Rank 1 = most important; rank 1 has highest point total

\*\*Refer to Segment Classification Figure 3, page 44

LOWER MISSOURI BASIN

<u>Stream Segment</u>	<u>Miles Affected (Estimated)</u>	<u>Point or Non-Point Source (P or NP)</u>	<u>Grid Coordinates</u>		<u>Problem</u>	<u>Priority for Correction*</u>	<u>Map Number**</u>
			<u>Beginning</u>	<u>Ending</u>			
Redwater Creek below Circle	80	NP	18N47E	27N50E	Natural salts, aggravated by poor land use practices	9	33
Muddy Creek below Reserve	70	NP	32N55E	28N55E	Coliforms and salts from poor land use practices	9	34
Poplar River below and including the East Fork	100	NP	37N48E	27N50E	Natural salts which may be aggra- vated by future coal mining in Canada	8	35

\* Rank 1 = most important; rank 1 has highest point total

\*\* Refer to Segment Classification Figure 3, page 44

<u>Stream Segment</u>	<u>Miles Affected (Estimated)</u>	<u>Point or Non-Point Source (P or NP)</u>	<u>Grid Coordinates</u>		<u>Problem</u>	<u>Priority for Correction*</u>	<u>Map Number**</u>
			<u>Beginning</u>	<u>Ending</u>			
Milk River below Big Sandy Creek	80 ?	NP P	33N19E26	27N42E32	High in turbidity and fecal coliforms due to poor land use practices, extensive irrigation and agricultural use of land, sewage treatment discharges, and low flows during portions of year.	10	39
Milk River from Canada to Fresno Reservoir	24	NP	37N9E4	35N12E10	Sediment and coliforms due to poor land use practices	9	36
Big Sandy Creek	18	NP	30N13E33	32N15E4	Sediment due to poor land use practices	9	37
Lodge Creek	24	NP	37N15E12	33N19E26	Low dissolved oxygen in the entire reach - cause unknown	9	38
Sage Creek	70	NP	34N10E	30N13E	Sediment from poor land use practices	8	40

\* Rank 1 = most important; rank 1 has highest point total

\*\* Refer to Segment Classification, Figure 3, page 44

MARIAS RIVER BASIN

Stream Segment	Miles Affected (Estimated)	Point or Non-Point Source (P or NP)	Grid Coordinates		Problem	Priority for Correction*	Map Number**
			Beginning	Ending			
Priest Butte Lake and all tributaries	-	NP	23N4W		Natural salts aggravated by poor land use practices	10	41
Alkali Lake northwest of Valier	-	NP	31N6W		Natural salts aggravated by poor land use practices	10	42
Deep Creek above Choteau	6	NP	23N5W	23N5W	Dewatering caused by agricultural practices	9	43
Teton River to Spring Coulee	70	NP	23N5W	24N03	Dewatering caused by agricultural practices	9	44
Teton River from Spring Coulee to Loma	115	NP	24N03W04	25N09E	Elevated temperatures, dewatering and salts caused by agricultural practices	9	45
Cottonwood Creek and Marias River below Cottonwood Creek	70	NP	30N07E29	25N09E	Sediment, elevated temperatures and dewatering caused by agricul- tural practices	9	46
Hilger Coulee	9	NP		31N2W34	Natural salts aggravated by poor land use practices	9	47
Two Medicine Creek below Badger Fisher Canal	36	NP	31N10W	31N05W	Sediment caused by agricultural practices	8	48
Birch Creek below Badger Fisher Canal	30	NP	29N08W	31N05W	Sediment caused by agricultural practices	8	49
Little Dry Coulee north of Conrad to the Dry Fork of Marias River	4	P	30N02W	31N02W36	Ammonia caused by Conrad STP	8	50

<u>Stream Segment</u>	<u>Miles Affected (Estimated)</u>	<u>Point or Non-Point Source (P or NP)</u>	<u>Grid Coordinates</u>		<u>Problem</u>	<u>Priority for Correction*</u>	<u>Map Number**</u>
			<u>Beginning</u>	<u>Ending</u>			
Old Maid Coulee near Cut Bank	2	P	33N06W02	33N06W	Ammonia caused by Cut Bank STP	8	51
Marias above Cottonwood Creek	80	NP	32N05W	31N06E	Sediment caused by agricultural practices	7	52

\* Rank 1 = most important; rank 1 has highest point total

\*\* Refer to Segment Classification, Figure 3, page 44

# MUSSELSHELL BASIN

<u>Stream Segment</u>	<u>Miles Affected (Estimated)</u>	<u>Point or Non-Point Source (P or NP)</u>	<u>Grid Coordinates</u>		<u>Problem</u>	<u>Priority for Correction*</u>	<u>Map Number**</u>
			<u>Beginning</u>	<u>Ending</u>			
Musselshell River from Shawmut to the mouth	300	NP	7N18E30	19N29E12	High concentrations of nutrients salts, and sediments, elevated temperatures, and physical loss of habitat caused by agricultural practices	6	53

\* Rank 1 = most important; rank 1 has highest point total

\*\* Refer to Segment Classification, Figure 3, page 44

## MIDDLE MISSOURI BASIN

Stream Segment	Miles Affected (Estimated)	Point or Non-Point Source (P or NP)	Grid Coordinates		Problem	Priority for Correction*	Map Number**
			Beginning	Ending			
Arrow Creek	30	NP	19N12E7	23N15E32	Natural salts and sediments aggravated by poor land use practices	10	54
Coffee Creek to Arrow Creek	15	NP	18N13E4		Natural salts and sediment aggravated by poor land use practices	10	55
Wolf Creek from below Denton to the Judith River	24	NP	18N14E17	21N16E2	Natural salts and sediment aggravated by poor land use practices	10	55
Dry Wolf Creek to Wolf Creek	10	NP	18N15E33	18N15E10	Natural salts and sediment aggravated by poor land use practices	10	56
C-10 Boyd Creek to Big Spring Creek	3	NP	15N19E18		Coliforms from non-point sources	10	57
Ross Fork Creek	24	NP	14N15E11	15N16E8	Eutrophication and high BOD caused by agricultural practices	10	58
Sage Creek from north of Danvers to the Judith River	9	NP	18N16E31	18N16E32	Natural salts aggravated by poor land use practices	10	59
Cottonwood Creek to Beaver Creek	12	NP	15N17E22		Eutrophication caused by poor land use practices	10	60
Judith River from Hobson to Utica	8	NP	14N13E16	14N15E6	Coliforms, eutrophication and salts apparently caused by non-point sources	9	61
Beaver Creek to Big Spring Creek	12	NP	15N17E21	16N17E28	Eutrophication caused by agricultural practices	9	62
Judith River from Utica to the mouth	100	NP	14N13E16	23N16E26	Natural sediments and salts aggravated by poor land use practices	8	63

\* Rank 1 = most important; rank 1 has highest point total

\*\* Refer to Segment Classification, Figure 3, page 44

## UPPER YELLOWSTONE BASIN

<u>Stream Segment</u>	<u>Miles Affected (Estimated)</u>	<u>Point or Non-Point Source (P or NP)</u>	<u>Grid Coordinates</u>		<u>Problem</u>	<u>Priority for Correction*</u>	<u>Map Number**</u>
			<u>Beginning</u>	<u>Ending</u>			
Gardiner River and the Yellowstone River for a varying distance downstream	60	NP	7E09S		Arsenic and fluoride caused by natural thermal discharges in Yellowstone National Park	9	64

\* Rank 1 = most important; rank 1 has highest point total

\*\* Refer to Segment Classification, Figure 3, page 44

MIDDLE YELLOWSTONE BASIN

<u>Stream Segment</u>	<u>Miles Affected (Estimated)</u>	<u>Point or Non-Point Source (P or NP)</u>	<u>Grid Coordinates</u>		<u>Problem</u>	<u>Priority for Correction*</u>
			<u>Beginning</u>	<u>Ending</u>		

LOWER YELLOWSTONE BASIN

<u>Stream Segment</u>	Miles Affected (Estimated)	Point or Non-Point Source (P or NP)	Grid Coordinates <u>Beginning</u> <u>Ending</u>		<u>Problem</u>	<u>Priority for Correction*</u>
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LITTLE MISSOURI BASIN

<u>Stream Segment</u>	<u>Miles Affected (Estimated)</u>	<u>Point or Non-Point Source (P or NP)</u>	<u>Grid Coordinates</u>		<u>Problem</u>	<u>Priority for Correction*</u>
			<u>Beginning</u>	<u>Ending</u>		

# KOOTENAI BASIN

<u>Stream Segment</u>	<u>Miles Affected (Estimated)</u>	<u>Point or Non-Point Source (P or NP)</u>	<u>Grid Coordinates</u>		<u>Problem</u>	<u>Priority for Correction*</u>	<u>Map Number*</u>
			<u>Beginning</u>	<u>Ending</u>			
Fisher River	12	NP	29N29W	30N29W	Natural sediments aggravated by poor land use practices and construction	8	65
Kootenai River from Libby Dam to the Montana-Idaho border	50	NP	30N31W		Supersaturation of gases caused by Libby Dam	6	66

\* Rank 1 = most important; rank 1 has highest point total

\*\* Refer to Segment Classification, Figure 3, page 44

FLATHEAD BASIN

<u>Stream Segment</u>	<u>Miles Affected (Estimated)</u>	<u>Point or Non-Point Source (P or NP)</u>	<u>Grid Coordinates</u>		<u>Problem</u>	<u>Priority for Correction*</u>
			<u>Beginning</u>	<u>Ending</u>		

## UPPER CLARK FORK BASIN

<u>Stream Segment</u>	<u>Miles Affected (Estimated)</u>	<u>Point or Non-Point Source (P or NP)</u>	<u>Grid Coordinates</u>		<u>Problem</u>	<u>Priority for Correction*</u>	<u>Map Number**</u>
			<u>Beginning</u>	<u>Ending</u>			
Cottonwood Creek	8	NP	12N11W	13N11W	Sediment from agricultural practices	10	67
Douglas Creek	6	NP	12N12W	13N11W	Sediment from agricultural practices	10	68
Owl Creek	4	NP	16N15W	16N15W	Dewatering by agricultural diversion	10	69
North Fork of Blackfoot River	15	NP	16N10W	14N11W	Natural sediments	9	70
Union Creek	10	NP	13N15W	15N16W	Sediment from agricultural practices	9	71
Elk Creek	8	NP	13N14W	14N15W	Sediment from agricultural practices	9	72
Yourname Creek	2	NP	13N12W	13N12W	Dewatering by agricultural practices	9	73
Gold Creek	8	NP	15N17W	14N16W	Sediment from logging practices	9	74
Brock Creek	5	NP	10N10W	9N10W	Nutrient and sediments from phosphate mining activities	9	75
Dempsey Creek	15	NP	7N11W	6N9W	Dewatering by agricultural practices	9	76
Lower Warm Springs Creek	8	NP	4N11W	5N9W	Dewatering by agricultural practices	9	77
Racetrack Creek	10	NP	6N11W	6N9W	Dewatering by agricultural practices	9	78
Mill Creek	10	NP	4N11W	4N10W	Dewatering by agricultural practices	9	79
Willow Creek	10	NP	4N10W	4N10W	Dewatering by agricultural practices	9	80

Stream Segment	Miles Affected (Estimated)	Point or Non-Point Source (P or NP)	Grid Coordinates		Problem	Priority for Correction*	Map Number**
			Beginning	Ending			
Brown's Gulch Creek	8	NP	N8W	5N9W	Dewatering by agricultural practices	9	81
Basin Creek	5	NP	2S7W	3S7W	Dewatering by agricultural practices	9	82
Blacktail Creek	5	NP	2S7W	3S7W	Dewatering by agricultural practices	9	83
Lander's Fork of the Blackfoot River	15	NP	16N8W	14N8W	Sediment from natural causes	9	84
Placid Lake	-	NP	16N15W		Dewatering and eutrophication caused by agricultural diversion	8	85
Flint Creek below Georgetown Lake	2	NP	15N13W	6N14W	H <sub>2</sub> S, low dissolved oxygen from the lake discharge	8	86
Georgetown Lake	-	NP	5N13W		Eutrophication, natural, aggravated by poor land use practices	8	87
The Blackfoot River downstream to Lincoln	24	NP	16N7W	14N9W	Metals from past mining activities	7	88
Nevada Creek	15	NP	12N10W	14N11W	Sediment and dewatering from agricultural practices	7	89
Clark Fork River from Deer Lodge to Rock Creek	80	NP	7N9W	11N17W	Low dissolved oxygen due to eutrophication	5	90
Silver Bow Creek and the Upper Clark Fork River to the confluence with the Little Black- foot River	60	NP	3N8W	9N10W	Metals and nutrients caused by past mining activities and municipal discharges from Butte	4	91

\* Rank 1 = most important; rank 1 has highest point total

\*\* Refer to Segment Classification, Figure 3, page 44

LOWER CLARK FORK BASIN

Stream Segment	Miles Affected (Estimated)	Point or Non-Point Source (P or NP)	Grid Coordinates		Problem	Priority for Correction*	Map Number**
			Beginning	Ending			
West Fork Thompson River	2	NP	23N28W	22N28W	Sediments derived from silvi-cultural practices	10	92
Prospect Creek	2	NP	21N29W		Sediments caused by construction activities and silvicultural practices	10	93
Clark Fork River below Noxon, Rapids Dam and Cabinet Gorge Dam	2	NP	26N32W 28N25W		Supersaturation of gases caused by dam operation	9	94
McGregor Creek	2	NP	26N26W	26N26W	Sediments caused by construction activities and silvicultural practices	9	95
West Fork of the Bitterroot River	18	NP	1S22W	2N20W	Sediments from poor land use practices	7	96
Bitterroot River below Hamilton	50	NP	6N21W		Dewatering and sediments from poor land use practices and possible coliforms from subdivisions near Missoula	7	97

\* Rank 1 = most important; rank 1 has highest point total

\*\* Refer to Segment Classification, Figure 3, page 44

(Refer to Chart 2 for Exact Locations and Priority for Correction)

